February
1953

71st Annual Report

OF THE

OHIO AGRICULTURAL EXPERIMENT STATION

Wooster, Ohio

Bulletin 730

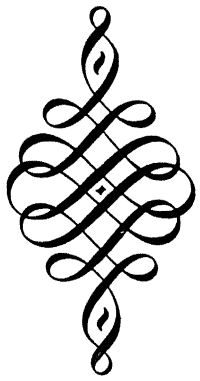
"Your Experiment Station . . . working for a more abundant living"

The Honorable Carlton S. Dargusch
President of the Board of Control
Ohio Agricultural Experiment Station

Dear Sir:

I have the honor to present to the Board of Control for transmission to the Governor of Ohio, as required by law, the Seventy-first Annual Report of the Ohio Agricultural Experiment Station for the year ended June 30, 1952.

L. L. RUMMELL
Director



The Honorable Frank J. Lausche
Governor of Ohio

Dear Sir:

I have the honor to present to you the Seventy-first Annual Report of the Ohio Agricultural Experiment Station for the year ended June 30, 1952.

Carlton S. Dargusch
President, Board of Control

CONTENTS

THE YEAR IN RESEARCH

Research is the life blood of agricultural progress. Without it in the last half-century, farmers would not now be feeding the ever-swelling population of this country. Industry would not have progressed so far nor produced so great an output. And in turn, America would not today have the national strength and international prestige except for this high degree of skill and efficiency on the part of farmers which can be traced to research and education.

Today progress is more keenly appreciated than in any previous generation. Farming is a scientific industry with the highest capital investment per worker. In the future, the highly complex metropolitan centers of America will depend to even greater degree upon the sustenance afforded them by the farms.

Ohio is in the center of that picture. Here the industrial East meets the agricultural West. Already industrial income vastly exceeds that of the farms. Urban population exceeds the farm population eight to one. The trend is toward even higher industrialization, fewer acres in food production, a smaller percentage of the people on farms. Hence there will be greater mechanization, larger output per worker, greater investment in buildings and machinery, more productive acres and farm animals. The role of the agricultural experiment station, therefore, becomes increasingly important to meet this challenge of food production.

During the year covered by this report, the Ohio Agricultural Experiment Station made notable contributions to increasing output and incomes of farmers. Application of such research has assured adequate food and fiber for all peoples, with some to spare for exporting to less fortunate countries. Details of the year's work are not given in this report, but have been made available to the public through the station's publications, news and magazine stories, over the radio and television, and through meetings and demonstrations.

Where Progress Begins

Breeding farm animals for increased vigor and economy of gains in meat production, conservation practices with utilization of grasses by livestock, control of new pests and diseases, improved crop rotations and varieties, artificial breeding, improved marketing, newer knowledge of nutrition, antibiotics and the like—all these are studied at your agricultural experiment station. Many of these are studied in cooperation with other experiment stations in the North Central Region to avoid duplication and to pool results.

The Experiment Station is keenly aware of current problems or emergencies, such as disease and insect attacks. During the year it tackled oak wilt when this disease first threatened the timber supply. The use of the airplane in agriculture was studied in special projects, an example of the ultra-modern in research. New feeds, new pesticides, new practices about the farm usually are tested experimentally several years before farmers have them in common usage.

State funds make possible most of the research projects in Ohio, with supplemental federal funds as provided by Congress. Private industry lends support in limited degree to specialized, applied research.

Cooperation, Coordination and Recognition

Most of the research is done in laboratories, feedlots and fields at Wooster. Close correlation and integration are maintained with the College of Agriculture at Columbus, and by conferences also with representatives of the Agricultural Extension Service.

During the year the correlation of departments in College and Station was consummated when the Animal Science Department was merged at each institution under a common chairmanship. Dr. T. Scott Sutton was named chairman, while other additions to this department included Dr. A. L. Moxon, associate chairman, Dr. E. W. Klosterman, and Dr. William Tysnik.

The Dairy Science Department was augmented by the selection of Dr. L. O. Gilmore as associate chairman. The Poultry Science Department received Dr. Earl N. Moore as associate chairman, with Dr. Harold Yacowitz as staff member in nutrition. The Veterinary Science Department added Dr. W. D. Pounden as associate chairman, along with Dr. D. L. Thomas as veterinarian in charge of Station flocks and herds. An enlarged research program was instituted in animal sciences and disease control with addition of these research workers. This should materially aid the livestock and poultry industry of the state.

Special recognition of Ohio's important contributions to agricultural science came in the year. Dr. John W. Hibbs received the Borden Award and Dr. L. C. Chadwick was given the Norman J. Colman Award, in recognition of their outstanding research in recent years, one in dairying and the other in ornamental horticulture.

Research Around the State

The pattern of research farms throughout the state gradually is assuming its ultimate form. There are now four state-owned farms devoted to general agricultural research; namely, in northeastern, in southeastern, in central and in northwestern Ohio. The last named substation in Wood County was occupied for the first time, March 1952.

Request has been made for state funds to buy a fifth farm for the southwestern quarter of the state. If such a farm is acquired, the pattern will include one experiment farm in each quarter of the state and one at Columbus. In addition there are specialized vegetable farms at Marietta and Willard, along with five small farms owned by counties and operated largely as demonstration farms with limited research by the Station at Wooster.

One gift farm (from W. E. Levis, Erie and Sandusky counties) is in the process of transfer to the Experiment Station. It comprises 350 acres and eventually will be a dairy farm that demonstrates grassland farming. Wildlife research will be conducted on a limited area that faces Sandusky Bay.

Improvements and Information

Physical improvements about the main station and outlying farms continued during the year, including farm homes, barns, laboratories, roads, tiling and the like. Six new greenhouses were added at Wooster, three from state funds, two by federal aid, and one a gift from Ohio hothouse growers in recognition of service the Station had given their industry through many years.

Public relations and information activities stepped up their tempo in the year. There are now three editors on the staff, working closely with the Extension Service in dissemination of publications and information. The public came in conferences, at field days and as individuals in unprecedented numbers to the main station at Wooster and to outlying farms. All this is simply an expression of the primary function of this institution—**to render greatest possible service to the citizens of Ohio.**

Director

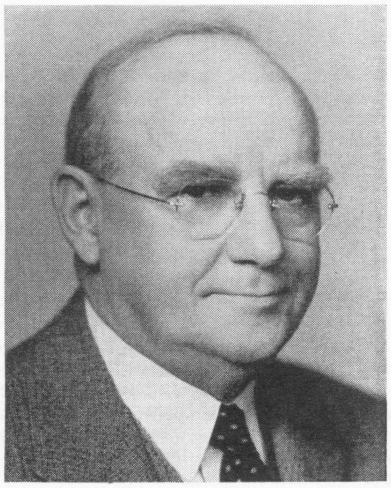
Station Board of Control

GEN. CARLTON S. DARGUSCH
President

CARLTON S. DARGUSCH, Columbus attorney. Attended Ohio State and Indiana University where he received his law degree. He has been a Board of Control member 15 years. He was deputy director of the National Selective Service System during World War II. He is now a brigadier general in the Reserve. He served as tax commissioner of Ohio from 1933 to 1937. He has been the author of many Ohio laws and since 1949 has been a member of the "Little Hoover" Commission of Ohio.

ROBERT N. GORMAN
Vice-President

ROBERT N. GORMAN, Cincinnati Attorney. He has been a Judge of the Ohio Supreme Court and holds a law degree from Harvard University, has taught law at the University of Cincinnati and has been on the faculty of the Chase Law school. During World War II he was first prosecutor for the American Military Government in North Africa and Sicily; chief civil affairs officer in Palermo province, Sicily, then chief of the AMG training branch in this country. He was once Hamilton County prosecuting attorney, and a common pleas court judge.



CARL E. STEEB
Secretary

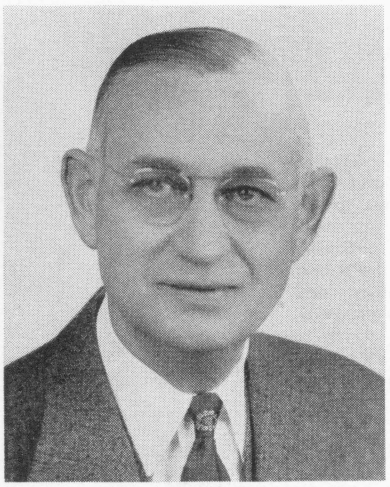
CARL E. STEEB, Columbus, secretary of the Board of Control since 1942. He received the bachelor's degree from the University in 1899 and that year joined the administrative staff as an accountant. He became business manager five years later and held that post until his retirement in 1945. He was awarded honorary degrees by Bowling Green State University in 1945 and by Ohio State in 1946.

C. F. KETTERING

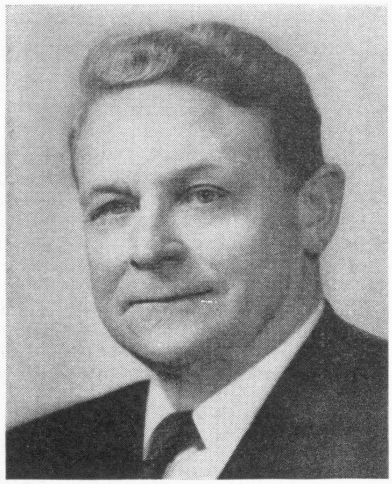
F. G. KETNER

CHARLES F. KETTERING. Noted Dayton Inventor. He has served as a member of the board 17 years. An Ohio State graduate of 1904, he helped to organize the Dayton Engineering Laboratories Company, later known as "Delco." This company produced the self-starting, lighting and ignition system for automobiles, and also a widely used farm lighting system. In 1916 he set up the Dayton Research Laboratory, which was taken over by General Motors Corporation in 1920. In 1947 he retired as vice-president and general manager of GM Research Laboratories. Other Kettering developments include the electric cash register; the two-cycle Diesel engine; tetra-ethyl lead, the basis of ethyl gasoline; freon refrigerant; a high-compression gasoline engine; Duco paints; hypertherm, a fever-inducing machine; and the anoxia meter, used by anesthetists.

FORREST G. KETNER, Columbus. Secretary-treasurer and general manager of the Producers Livestock Cooperative Association. A graduate of Otterbein College, he served as county agricultural agent in Delaware County from 1918-20. He owns 1,200 acres of farm land in Pickaway County. He is a member of the executive committee of the National Council of Farmer Cooperatives; and has headed the Ohio Council of Farm Cooperatives, the National Swine Growers Association, and the Ohio Swine Improvement Association.



H. S. FOUST

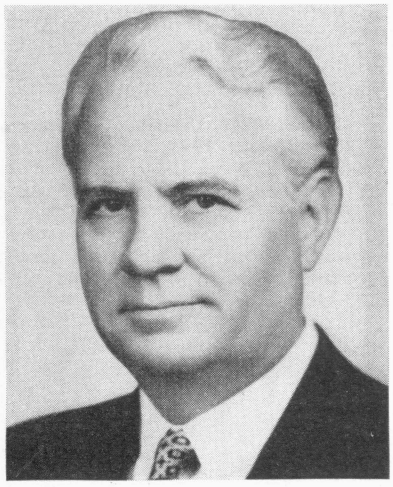


J. W. HUFFMAN

H. S. FOUST, exoffico member, is state director of agriculture and state fair manager. He is a graduate of Ohio State University in veterinary medicine and in World War I served in the Veterinary Corps. He operates a 418-acre livestock and dairy farm in Madison County.

JAMES W. HUFFMAN, Columbus attorney. Received a law degree from the University of Chicago in 1922, and also attended Ohio State and Ohio Wesleyan Universities. In 1923-24 he was assistant attorney-general of Illinois. He was executive secretary to Ohio's Governor Vic Donahey from 1924-27, a member of the Ohio Public Utilities Commission from 1927-29, and State Commerce Director in 1945. Later that year he was appointed to fill the unexpired term of U. S. Senator Harold Burton.

R. F. BLACK



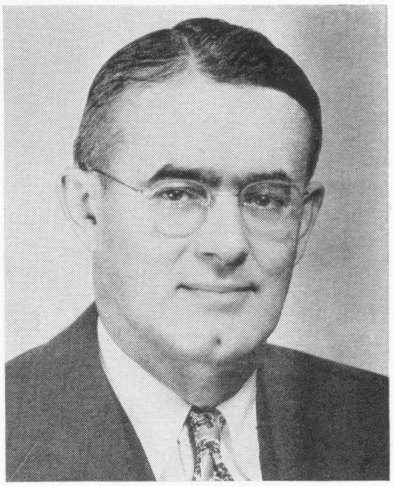
J. W. BRICKER

ROBERT F. BLACK, president of the White Motor Company, Cleveland. Attended Princeton University for three years, then entered industry. He became a salesman in the truck industry in 1912. In 1916 he joined the Mack Truck Co., Inc., and became vice-president of Mack International Motor Truck Company, New York, in 1921, continuing in this capacity for nine years. He headed the Brockway Motor Company, New York, from 1930 until he became president of the White Motor Company in 1935. He is a director and trustee of various firms and has been prominent in civic affairs in Cleveland.

JOHN W. BRICKER. U. S. Senator from Ohio. Attended Ohio State, where he received a batchelor's degree in 1916 and a law degree in 1920 and LL. D. in 1939. He has been attorney general, member of the Public Utilities Commission, and three times governor of Ohio. He was Republican vice-presidential candidate in 1944, elected to the Senate in 1945, and reelected in 1952.

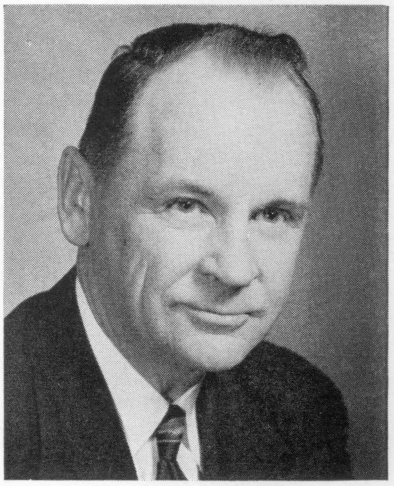
Station Administrative Council

L. L. RUMMELL, Director. He is also dean of the College of Agriculture at Ohio State University, from which he was graduated in 1915 and 1917. He was on the editorial staff of the Ohio Farmer 20 years, later serving as public relations counsel in industry 10 years. He is chairman of the State Soil Conservation Committee, member of the state Natural Resources Commission, deputy chairman of the Board of Directors of the Federal Reserve Bank of Cleveland, director of the Ohio Bell Telephone Company, director of the Union Stockyards Company of Cleveland. He served seven years as trustee of Ohio State University and member of Board of Control of the Experiment Station, was president of the National Association of Governing Boards of State Universities.



L. L. RUMMELL

W. E. KRAUSS, Associate Director. Ph. D. from Cornell University. Joined Ohio Experiment Station staff in 1926. Served successively as assistant, associate, and chief of Dairy Department, 1926-1948. Chairman of Department of Dairy Husbandry, Ohio State University, 1946-1947. Appointed Associate Director January 1, 1948. Member of leading scientific societies in fields of animal science, dairy science, biochemistry and nutrition. Winner of Borden Award in Dairy Production, 1938. Author of many publications and scientific articles in fields of animal and human nutrition. Chairman of Agricultural Board of the National Research Council. Currently Chairman of the Committee of Nine under the Research and Marketing Act.



W. E. KRAUSS

JOHN D. BRAGG, Administrative Secretary. Holds same position at both Ohio Agricultural Experiment Station and the College of Agriculture, is a graduate of Ohio State, formerly a County Agricultural Agent, and for 20 years was chief agriculturist for the State Department of Public Welfare. His responsibilities include business management and physical plant of the Agricultural Experiment Station at Wooster and all outlying farms.

J. D. BRAGG

G. A. HUMMON. Assistant to Director (Public Relations). Farm reared at Leipsic, Ohio. World War I veteran. Farmed five years in Putnam County following war and then received B. S. in agriculture from Ohio State University. Huron County Agricultural Extension Agent for 19 years. President and secretary of Ohio County Agents Association. Joined Experiment Station staff in 1948 as business manager. Appointed to present position in 1949.

G. A. HUMMON

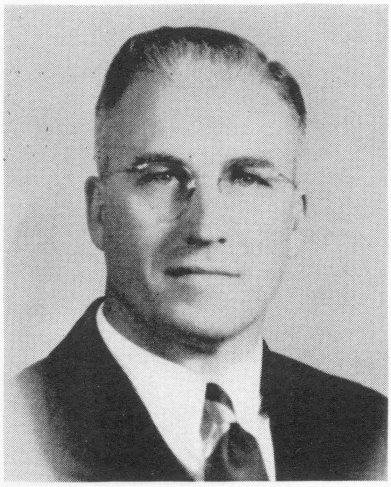
H. A. HESSON, Business Manager. Born near Caldwell, Noble County. Attended Franklin University, specializing in accounting. Joined the staff of Auditor of State, 1930, and served as examiner of state institutions. Appointed to present position in 1949.

H. A. HESSON

ROBERT E. YODER. Supervisor of Field Research. Farm reared in Wayne County, Ohio. Ph. D. in agronomy, soils, chemistry, and plant science at Ohio State University. Seven years with Alabama Polytechnic Institute as assistant agronomist and agricultural engineer. Joined Experiment Station staff in 1939 as associate agronomist and cooperating agent, Soil Conservation Service. Later became chief agronomist and in 1948 appointed to present position. Member leading agronomy and agricultural engineering societies.

R. E. YODER

Station Executive Committee

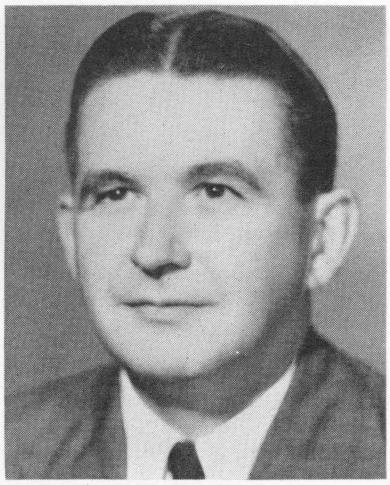


G. W. VOLK

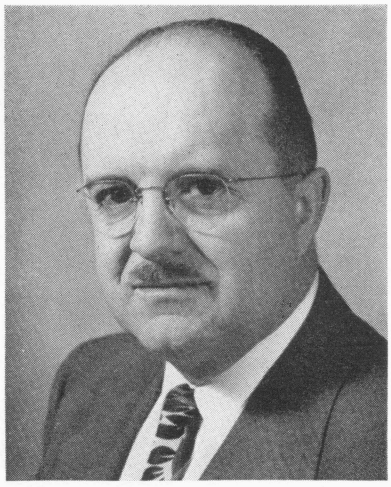
C. A. LAMB

G. W. VOLK. Chairman, Department of Agronomy. Ph. D. from University of Wisconsin. Soil chemist, United Fruit Company, Honduras, 5 years. Taught and did research at Oklahoma A. & M. College 1936-38 and at Alabama Experiment Station, 1938-44, when he joined the Ohio Agricultural Experiment Station staff. Appointed chairman of agronomy in 1947. Member of American Society of Agronomy, Soil Science Society. Author of texts on soil fertility, mineralogy and soil chemistry.

C. A. LAMB. Associate Chairman, Department of Agronomy. A native of Canada, he studied at University of British Columbia and McGill University. Ph. D. at Cornell in 1935. Taught at University of British Columbia two years. Appointed assistant in agronomy at the Experiment Station in 1931; professor of agronomy at Ohio State 1948 and associate chairman of the department in 1950. Holds membership in American Society of Agronomy, fellow Ohio Academy of Science and American Association of Cereal Chemists.



T. S. SUTTON



A. L. MOXON

T. S. SUTTON. Chairman, Department of Animal Science. Ph. D. from Ohio State University. Appointed to animal husbandry staff at university, 1929; named chairman of agricultural biochemistry, 1948, and to present position in 1951; since 1950, also assistant dean, College of Agriculture. Member of American Chemical Society, American Institute of Nutrition, American Dairy Science Association and other organizations. Received American Feed Manufacturers' Award, 1949; editor, Journal of Dairy Science, 1938-46.

A. L. MOXON. Associate Chairman, Department of Animal Science. Born in Flandreau, South Dakota. Educated at South Dakota State College. Ph. D. in biochemistry and medical science from University of Wisconsin, 1941. Staff member of South Dakota Experiment Station, 1934 to 1951; eleven years as head of chemistry department. Appointed to present position at the Ohio Experiment Station in 1951. Belongs to leading animal science and chemical societies. Author or coauthor of more than 80 Experiment Station Bulletins and scientific journal articles.

B. S. MEYER

H. C. YOUNG

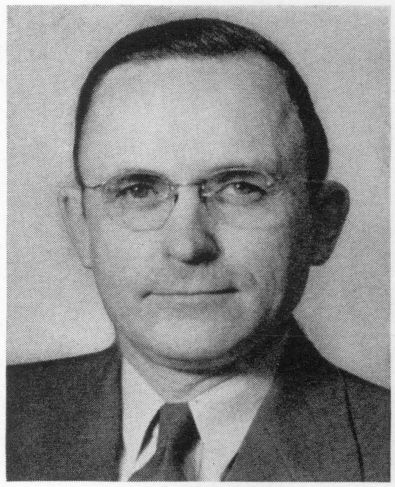
B. S. MEYER. Chairman, Department of Botany and Plant Pathology. Ph. D. from Ohio State University. On staff of Ohio State University, 1923-27. Associate forest ecologist with Central States Forest Experiment Station 1927-28. Rejoined staff of Ohio State University in 1928, becoming chairman of botany and plant pathology in 1946. Appointed to same position at Experiment Station in 1948. Member and past president of American Society of Plant Physiologists, in addition to membership in other leading botanical societies. Author of several texts on plant physiology and numerous technical papers. Editor-in-chief, American Journal of Botany, 1946-51.

H. C. YOUNG. Associate Chairman, Department of Botany and Plant Pathology. Born and reared on an Ohio farm. Educated at Ohio University and North Carolina State. Ph. D. in botany and plant pathology at Washington University in 1922. Taught at North Carolina State three years. Associate in research at Michigan State seven years. Joined botany and plant pathology department at Experiment Station in 1923. Veteran of World War I. Member of Ohio Academy of Science and American Phytopathological Society.

FORDYCE ELY. Chairman, Department of Dairy Science. Ph. D. from University of Minnesota. Taught at Iowa State College and University of Kentucky from 1922 to 1948. Became professor and chairman of dairy science at Ohio State and the Experiment Station in 1948. Member and past president of American Dairy Science Association. Military service during World War I.

L. O. GILMORE. Associate Chairman, Department of Dairy Science. A native of Minnesota. Studied at University of Minnesota and Kansas State College. Ph. D. at the latter in dairy husbandry in 1939. County and State Extension work in Minnesota two years. Dairy extension specialist at Kansas State three years. Engaged in research and teaching at University of Minnesota six years. Appointed to Ohio State University in 1948. Appointed to Experiment Station staff in 1949. Lists membership in leading science and nutrition societies. Author of text on Dairy Cattle Breeding.

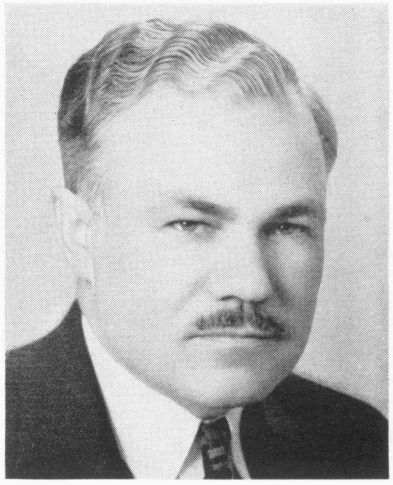
FORDYCE ELY



L. O. GILMORE

D. F. MILLER. Chairman, Department of Entomology. Ph. D. from Ohio State University. Taught sciences at Kingfisher and Wittenberg Colleges 5 years. Joined Ohio State faculty in 1923 as instructor and became full professor in 1943. Appointed chairman of zoology and entomology at university in 1947, and to the chairmanship of entomology at Experiment Station in 1948. Holds membership in a number of leading scientific societies. Author of several biology texts.

C. R. NEISWANDER. Associate Chairman, Department of Entomology. Ph. D. at Ohio State in entomology, zoology, and botany, 1926. High school principal five years. Appointed to Experiment Station staff as assistant entomologist 1923. Received present appointment 1948. Member of the American Association for Advancement of Science, American Association of Economic Entomology, Entomology Society of America, Ohio Academy of Science, Phi Beta Kappa, Sigma Xi, and Izaak Walton League. Veteran of World War I.



D. F. MILLER

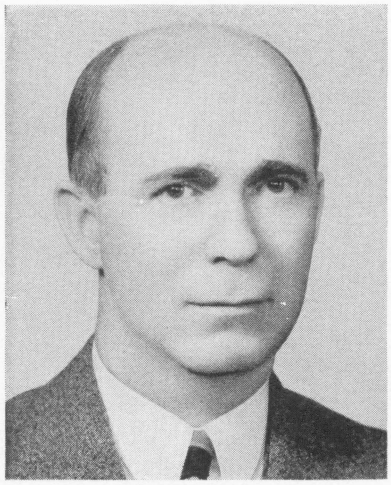
C. R. NEISWANDER

GLADYS A. BRANEGAN. Chairman, Department of Home Economics. Ph. D. from Columbia University. Taught foods and nutrition at Texas State Women's College; served as dean at Montana State College, and also visiting professor of home economics, Hunter College, N. Y. Appointed professor and Director of School of Home Economics, Ohio State University, and chairman of home economics in the Experiment Station, 1945. Past president Ohio Council on Family Relations. During World War II, state chairman of Montana Nutrition Committee. President of American Home Economics Association 1940-42; Author of Home Science Teacher Training under the Smith Hughes Act and chairman of committee publishing Home Economics in Higher Education.

MARY B. PATTON. Associate Chairman, Department of Home Economics. Ph. D. from Ohio State University. Taught 3 years in public schools. Joined Ohio State University and Experiment Station staffs in 1916. Became associate chairman in 1950. Member of the American Home Economics Association, Sigma Xi, Phi Upsilon Omicron, and Omicron Nu; regular contributor to technical and nutritional journals.

GLADYS A. BRANEGAN

MARY B. PATTON

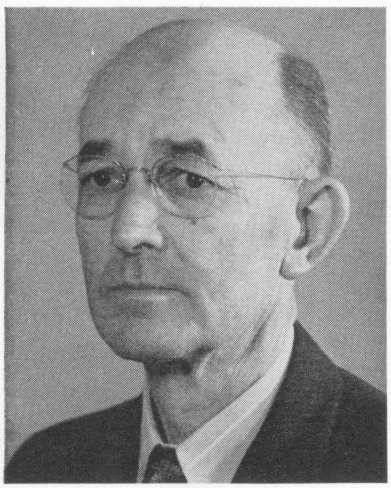


E. L. DAKAN

E. N. MOORE

E. L. DAKAN. Chairman, Department of Poultry Science. B. S. from University of Missouri. Appointed chairman of poultry, South Dakota Agricultural College, 1918 and in same position, Ohio State University, since 1919. Received present Experiment Station appointment in 1948. Member of American Association for the Advancement of Science. Poultry Editor, Ohio Farmer, since 1942.

E. N. MOORE. Associate Chairman, Department of Poultry Science. Born and reared on an Ohio farm. B. S. in Agriculture and D.V.M. from Ohio State University, 1930. Assistant veterinarian, West Virginia four years. West Virginia State diagnostician three years. Conducted research on poultry and turkey diseases at University of Delaware and Cornell. Joined Station staff in 1951. Holds membership in leading national honorary societies, American Veterinary Medical Association and others.



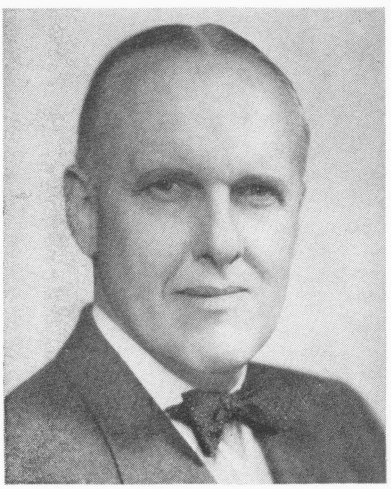
B. H. EDGINGTON

W. D. POUNDEN

B. H. EDGINGTON. Chairman, Department of Veterinary Science. Graduate of Chicago Veterinary College and Ohio State University. D.V.M. degree from the latter in 1912. Served Ohio Department of Agriculture as both state veterinarian and chief pathologist. Chairman, veterinary research, OSU, eight years. Joined Experiment Station staff in 1923. Member of American Veterinary Medical Association, and various other research, livestock, and bacteriological societies.

W. D. POUNDEN. Associate Chairman, Department of Veterinary Science. Born in England. Training received abroad, at Colorado A & M (D. V. M.), at University of Wisconsin (M. S.), and at Ohio State University (Ph. D.). Instructor Veterinary Science, during 3½ years in Wisconsin. Joined Ohio Agricultural Experiment Station 1942. World War II Veteran. Mastitis research for the U.S.D.A., Beltsville, Maryland, 1½ years. Member, American Veterinary Medical Association, American Dairy Science Association, and others.

J. I. FALCONER



F. S. HOWLETT

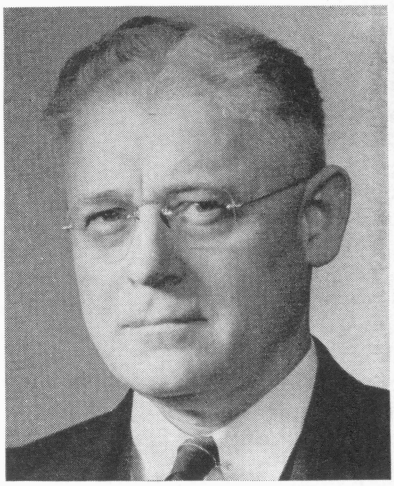
J. I. FALCONER. Chairman, Department of Agricultural Economics and Rural Sociology. Educated at University of New Hampshire, with Ph. D. from University of Wisconsin. Professor at Ohio State University 34 years. Appointed department chairman in 1926. Member leading national agricultural economics associations. Author of History of Agriculture in the Northern United States.

FREEMAN S. HOWLETT. Chairman, Department of Horticulture. A native New Yorker. Educated at Cornell University. Ph. D. in 1925. Joined Ohio Experiment Station staff in 1924 as assistant horticulturist. Appointed department chairman, Ohio State University and Experiment Station, in 1947. National Research Council Foreign Fellow, John Innes Horticultural Institution, London (England) 1932-33. Fellow, American Association for the Advancement of Science. Member leading national horticultural and botanical societies.

O. D. DILLER. Chairman, Department of Forestry. A native Ohioan, he was educated at Bluffton College and The Ohio State University. Ph. D. from Ohio State in forest ecology, 1934. Performed research for U. S. Forest Service four years, and joined Experiment Station staff in 1937. Appointed to present position, 1950. Member of Society of American Foresters, Ohio Academy of Science, Izaak Walton League of America, and others. Members of board of trustees, Bluffton College.

O. D. DILLER

G. W. McCUEN. Chairman, Department of Agricultural Engineering. B. S. in agriculture from University of Illinois. Agricultural engineering editor, Ohio Farmer 6 years. Fellow and past president, American Society Agricultural Engineers. Delegate to International Congress, Agricultural Engineers, Madrid, 1935. Appointed to present position 1927. Editor, Motors and Machinery Section, POULTRY TRIBUNE, since 1940.



G. W. McCUEN

T. F. WONDERLING. Superintendent of Outlying Farms. Born at Utica, Licking County. Graduated from Ohio State University college of agriculture. Started teaching at Old Fort, Ohio. In 1944 had charge of vocational agricultural work at Old Fort and Green Springs. Joined the Department of Public Welfare as manager of the Tiffin State Hospital farm 1945, and to Lima State Hospital as farm manager in 1946. Joined Station staff in his present position in 1948. Member of the Ohio Society of Farm Managers and Rural Appraisers.

T. F. WONDERLING

RESEARCH PROJECTS

COMPLETED, REVISED OR INITIATED

NEW OR REVISED PROJECTS

Agricultural aircraft
- Aerially applied materials
- Particle deposit

Tillage practices
Mastitis of cattle
Vaccines for hog cholera
Greenhouse roses
Biological changes in frozen roasters
Pasture project
- Grazing management
- Ladino clover and birdsfoot trefoil
- Crops for a dairy enterprise
- Pasture species for dairy animals
- Pasture for beef animals
- Birdsfoot trefoil vs. ladino clover
- Pasture for sheep

Plantation management in Ohio (Christmas trees)
Calcium balance studies
Apple variety trials
Nitrogen nutrition of fruit trees
Nutrient status of Ohio vineyards
Handling Rome Beauty apples and peaches
Red raspberry behavior
Digestion studies with beef cattle
Improvement of beef cattle
Relationship between iodine and cholesterol
Retail distribution of meats
Marketing
- Peaches in northern Ohio
- Washed and unwashed potatoes

Marketing livestock through auctions
Pricing of milk and its products
Analysis of soils and plants
X-ray diffraction techniques
Determining crude fiber and N.F.E. of feeds
Oat breeding and testing
Varieties of soybeans
Stone fruit virus diseases
Mosaic diseases of tomatoes
Tomato early blight organism
Oak wilt disease
- Pathological aspects
- Ecological aspects
- Possible insect vectors

Control of apple and pear insects
Insect phases of corn research program
Control of vegetable diseases
Insect resistance in the potato
Greenhouse vegetable crop pests
Insect resistance in onions
Mineral nutrition of corn
Abscission of flowers and fruits
Potassium in soils
Production and hatchability of hens' eggs
Effect of histomonastatic agents on turkeys
Species of coccidia affecting poultry
Rations for laying flock
Nesting habits of pullets
Producing poultry on built-up litter
Social change in Ohio
Antibiotics for pigs
Market lamb production

PROJECTS COMPLETED

Consumer acceptance of frozen foods
Maple sugar production
Frozen food lockers
Ohio market milk
Financing feeder livestock
Abscission of gardenia buds
Studies with orchids
Processed grape products
Development of grape gelatine dessert
Protein and amino acid metabolism
Child rearing practices
New types of washing machines
Automatic clothes drying
Marketing Ohio apples and peaches
Soil structure for potatoes
Orchard culture studies
Apple variety trials
Red strains of apple varieties
Mineral composition of feed and milk
Built-up poultry litter
Malic acid in Bryophyllum calycinum
Fattening native lambs
Blood serum as a semen diluent
Antigens in spermatozoa of bulls
Influence of sperm on conception
Sweet corn breeding
Oat testing and improvement
European red mite control
Control of apple aphids
Codling moth control
Control of red-banded leaf roller
Control of vegetable crop insects
Glasshouse vegetable crop insects
Mineral nutrition of corn
Causes of irregular fruit setting
Magnesium in Ohio soils
Effect of built-up litter on coccidiosis
Eggs affected by ration and litter
Egg production with and without grit
Hormone residues in poultry
Strip cropping as adapted to livestock grazing practice
Metabolism of older women

CURRENT RESEARCH PROJECTS

AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

The income of Ohio farmers by counties.
Desirable adjustments in Ohio's crop and livestock pattern.
Changes in Ohio farm land values and their causes and the use of mortgage credit.
Marketing Ohio milk and cream.
Methods of handling of Rome Beauty apples for storage.
Elasticity of demand for farm products important to Ohio Agriculture.
Pricing of milk and its products.
Marketing slaughter livestock by carcass weight and grade.
Marketability of fresh fruits and vegetables.
Economic and social aspects of soil conservation in Ohio.
Prepackaging of farm products at the farm level.
An appraisal of the market news service for farm products in Ohio.
Marketing Ohio fruits and vegetables.
Financing feeder livestock in Ohio.
Rural leadership and social action.
Chore labor in handling feed.
Marketing livestock through auctions in Ohio.
Adjusting Ohio farm lease to meet new developments.

AGRICULTURAL ENGINEERING

Eradication or control of weeds and other undesirable plants.
Combine harvesting characteristics of wheat varieties.
Conservation and improvement of muck soils.
Soil and water conservation in Ohio.
Alcohol-water injection for farm tractor engines.
Tillage practice in relation to soil structure and crop response.
Factors in the processing, preservation and utilization of meadow crop silages.
Interrelationships of crop rotations, organic matter input, soil structural conditions, and the internal drainage characteristics of soils.
Harvesting and storing of corn and small grains.
Development of equipment and evaluation processes for agricultural aircraft.
Chore labor in handling feed.

AGRONOMY

Development of improved methods of breeding corn.
Wheat testing and improvement.
Barley testing and improvement.
Oats testing and improvement.
Pasture for chickens.
Meadows and pastures for hay and forage on the sheep farm.
Rates of nitrogen for corn at different rates of planting.
The Ohio soil survey.
Composition of the parent material of the glacial soils of Ohio.
Mineralogical composition of Ohio soils.
Physical and chemical characteristics of important Ohio soils.
Fry farm rotations.
Preliminary and exploratory studies with forage crops.
Sweetclover breeding and strain testing.
Smooth bromegrass culture, breeding and strain testing.
Culture and rotation experiments with soybeans.
Evaluation of new and standard strains of red clover.
Breeding and evaluation of improved strains of alfalfa.
Adaptation of crops under strip-cropping system to livestock grazing practice (sheep).
The role of green manure crops.
Combine harvesting characteristics of wheat varieties.
Conservation and improvement of muck soils.
Timothy variety trials.
Soil fertility and fertilizer practices.
Soil and water conservation in Ohio.
The productivity of nursery soils under various cropping systems.
Cultural practices for sugar beets.
Turf culture and pest control.
Seed corn storage studies.
Soil aeration in relation to growth of plants and nutrient uptake by plants.
Daily accumulation of mineral elements in corn plants.
Spectrographic analysis of plant materials and soil extracts.
Stability of soil struture as affected by soil additives.
Accumulation and movement of minor elements in plants under different pH values.
Continuous culture fertility.
Legume reaction.
Sweet clover for green manure.
Four levels of fertility.
Rejuvenation of eroded land.
Crop rotations for sugar beets.
Slope vs. contour culture for row crops in Ohio.
Production, management and utilization of pastures.
Soil structure, its formation and importance to crop production.
Tillage practice in relation to soil structure and crop response.
Factors in the processing, preservation and utilization of meadow crop silages.
Forage crop ecology and physiology in seeding establishment and crop growth and stand longevity.
Development and evaluation of improved varieties of soybeans for farm and industrial use.
Factors affecting the nature and behavior of native and added potassium in soils.
Nutrition and physiology of soybeans.
Interrelationships of crop rotations, organic matter input, soil structural conditions, and the internal drainage characteristics of soils.
Mulch culture vs. plowing for field crops.
Biology, ecology, and control of forage crop insects.
Eradication or control of weeds and other undesirable plants.
Maintenance of two or more nurseries of vegetatively propagated timothy strains possessing specific plant characteristics.

Soil organic matter in Ohio soils.
Harvesting and storing of corn and small grain.
Response of winter wheat varieties and strains to climatic and edaphic factors.
Mineral nutrition of corn.
Breeding field corn for Ohio.
Sweet corn breeding.
Potash and nitrogen requirements of corn and oats as affected by sweet clover and other crop residues.
Factors affecting growth and mineral absorption by plants.
Lime-phosphate studies.

ANIMAL SCIENCE

Returns per acre in steer feeding.
Crossing inbred lines of hogs of different breeds.
Adaptability and place of Columbia sheep in Ohio.
Meadows and pastures for hay and forage on the Sheep Farm.
Adaptation of crops under strip-cropping system to livestock grazing practices (sheep).
Infant mortality among lambs.
Purebred, two-breed crossbred and rotation crossbred pigs.
Use of C_{14} in the study of the relation of malic acid to glucose metabolism in bryophyllum calycinum.
Relative value of different grades of yearling steer cattle for use in a wintering, grazing, and feeding corn on pasture program for Ohio beef cattlemen.
Nature of the autoxidation reactions responsible for the rancification of fats and foods containing fats.
Fattening native lambs.
Effect of age of castration on calves.
Relative econmic value of using beef and native dairy type cows in a commercial herd when the calves sired by a beef type bull are sold at weaning time.
Economic returns from a herd of shorthorn cows bred to a beef type bull and fattening the calves for market.
Hormone residues in poultry treated with diethylstilbestrol or fed oestrogenic compounds.
Adaptability, place and use of Australian-New Zealand strong-wooled type Merinos in Ohio.
Processing of fresh meat.
Factors which influence the utilization of urea by ruminants.
Digestion studies with beef cattle.
Production, management and utilization of pastures.
Factors in the processing, preservation and utilization of meadow crop silages.
Use of outbred and inbred lines in hog production.
Materials supplemental to corn, protein, and minerals for pigs and methods of feeding on pasture.
Improvement of beef cattle through breeding practices.
Marketing slaughter livestock by carcass weight and grade.
Processing of fresh meat.
Effect of adding certain vitamins of the B-complex singly and in several combinations on mushroom production and on their vitamin contet.
A comparison of feed lot performance of steer calves produced through the application of scientific breeding.
The use of cattle twins and triplets to study the relative influence of heredity.
Nutritional factors affecting the production and hatchability of hens' eggs.
Improving protein supplements for fattening steers when poor quality roughage is used.
Influence of mineral ions on pancreatic digestion.
Effect of adsorbents and minerals on the determination of riboflavin and other B-complex vitamins.
Nutritional significance of built-up poultry litter.
Types of sheep and systems of breeding for market lamb production.
Extracted cottonseed meal as a protein concentrate for pigs.
Chore labor in handling feed.

BOTANY AND PLANT PATHOLOGY

Control of soil-borne diseases of glasshouse vegetable crops.
Apple measles disease or internal bark necrosis of apples.
Phloem necrosis disease of elm.
Conservation and improvement of muck soils.
Black raspberry cultural practices, fertilization, irrigation, anthracnose control and variety tests.
Effect of insecticides and fungicides on the composition, quality and shelf life of processed vegetables and fruit.
Tobacco mosaic disease of glasshouse-grown tomatoes.
Control of sugar beet diseases.
Stone fruit virus diseases and their control.
Oak wilt disease. Pathological aspects of the oak wilt disease.
Physiology and genetics of plant pathogenic microorganisms when grown in the presence of various radioisotopes.
Disease and insect resistance in the tomato.
Microbiological investigations of silages.
Tomato anthracnose with various fungicides.
Development and evaluation of improved varieties of soybeans for farm and industrial use.
Diseases of carnations.
Cereal disease investigations.
Evaluation of the collection of domestic and wild species of tomato.
Forage crop disease investigations.
Fungicides and spray adjuvants for fruit disease control.
Control of vegetable diseases.
Development of disease resistant strains of cucumbers.
Relation of bacteriophage to bacteria, with special reference to plant pathogens.

DAIRY SCIENCE

Value of oats in the simple grain mixture.
Limited vs. normal grain feeding to Jersey cows under soil conservation farming.
Relationship between the serum protein-bound iodine and plasma cholesterol in the bovine and their possible application to dairy production.
Relationship of fat content in the dairy ration to milk and butterfat production.
Use of blood serum as a semen diluent.
Occurrence of bovine cellular antigens in the spermatozoa of bulls.

Influence of area of deposit of bovine sperm on conception.
Physical and bacteriological changes responsible for the characteristic flavor of Italian cheeses.
Production, management and utilization of pastures.
Factors in the processing, preservation and utilization of meadow crop silages.
Vitamin A, carotene, ascorbic acid and riboflavin content of Ohio market milk.
Fundamental factors affecting the development of dairy calves.
Mastitis of cattle.
Cellular antigens in the blood of cattle.
Chore labor in handling feed.
Relation of vitamin D to parathyroid activity of the bovine.

ENTOMOLOGY

Strawberry insects (improvements in control).
European red mite control.
Biology, ecology, and control of the Japanese beetle.
Codling moth control.
Economic aspects affecting honey production and insects pollination of agricultural crops.
Biology and control of the red-banded leaf-roller.
Biology and control of insect pests of stone fruits.
Investigations on insects attacking ornamental plants.
Biology and control of vegetable crop insects.
Insects and allied pests that attack glasshouse vegetable crops.
Conservation and improvement of muck soils.
Effect of insecticides and fungicides on the composition, quality, and shelf life of processed vegetables and fruit.
Oak wilt disease. Possible insect vectors of the oak wilt organism.
Production, management and utilization of pastures.
Disease and insect resistance in the tomato.
Biology, ecology and control of forage crop insects.
Eradication or control of weeds and other undesirable plants.
Insect phases of the corn research program with special emphasis on European corn borer.
Control of the Oriental fruit moth by parasitization and/or insecticides.
Factors influencing the incidence of apple insects in different orchard areas.
Evaluating insect resistance in varieties and strains of potato.
Insects and allied pests that attack glasshouse vegetable crops.
Evaluating insect resistance in varieties and strains of onions.

FORESTRY

Preservative treatment of fence posts.
Sustained yield management of experimental forests.
Improvement of Ohio nut trees for wood and timber production.
Multiflora rose as a living fence.
Reclamation and use of strip-mined land in Ohio.
Sawmills and other primary wood-using industries.
Oak wilt disease. Ecological aspects.

HOME ECONOMICS

New types of washing machines in laundering fabrics.
Various detergents now available on the market and their use in automatic washing machines.
The calcium, phosphorus, and nitrogen metabolism of older women.
Automatic clothes drying as compared to line drying methods.
Histological changes in frozen roasters during storage at —10° F., 0° F., +10° F.
Nutritional status of school children.
Protein and amino acid metabolism in young college women.
Effect on child rearing practices of various types of child care information.
Determination of suitable work surface materials and finishes used in rural homes.
Effect of fat in isocaloric diets.

HORTICULTURE

Economics of spraying.
Phenological and weather studies in relation to orcharding.
Optimum economical life of commercial apple orchards.
Orchard culture studies.
Apple variety trials.
Propagation of ornamental plants.
Effect of growth promoting substances, height of heading, and deshooting upon the development of the framework.
Apple breeding for the purpose of producing late varieties for commercial use.
Tests of new and uncommon pear varieties.
Time of harvesting Beurre Bosc and other pears.
Growth and fruitfulness of certain Ohio apple varieties as affected by malling.
Caustic sprays as a means of inducing flower and fruit abscission in the apple.
Growth promoting substances.
Breeding greenhouse tomatoes.
Evaluation of promising new selections and varieties of stone and small fruits for Ohio.
Soil and cultural treatments for blueberries.
Orchard culture and spraying at County Experiment Farms.
Red strains of apple varieties.
Nutritional and light studies with orchards.
Fower bud initiation on flower color of the hydrangeas.
Nutritional and leafdrop studies with azaleas.
Elimination of argol development in processed grape products.
Fertilizers for early vegetable crops on sandy loam soal.
Variation in night temperature and potassium level in relation to fruit set.
Development of a grape gelatine dessert from dehydrated grape juice.
Development of still and carbonated fruit juice blends and fruit juice concentrates.
Influence or organic insecticides on flavor of stone fruits.
Hardiness adaptability and identification of species of some woody ornamental plants.
Vegetable variety testing.

Cause and prevention of onion "blast" or "tip burn".
Conservation and improvement of muck soils.
Interrelation of irrigation, rate of fertilizer application and spacing of potato plants.
Testing varieties and strains of nut trees.
Factors affecting, the cracking of tomatoes grown on stakes.
Nitrogen fertilization studies with cherry trees growing in three sod treatments.
Nitrogen fertilization studies with peach trees growing in two sod treatments.
Variety tests for early sweet corn for Southeastern Ohio.
Cultural experiments on tomatoes for canning.
Effect of varieties and starter solutions on the growth and yield of strawberries.
Black raspberry cultural practices.
Flower bud initiation in the lily as influenced by storage.
Effect of various cultural practices on the growth and flowering of greenhouse roses.
Manufacture and quality analysis of baby foods.
Effect of insecticides and fungicides on the composition, quality and shelf life of processed vegetables and fruit.
Soil and water conservation in Ohio.
Growth and production of tomatoes in the greenhouse as influenced by various levels of nitrogen, phosphorus, and potassium.
Variety studies with some greenhouse ornamental plants.
Development of Ohio State sherry wine by the use of Flor sherry process using Jerez and Chalon yeasts.
Lima bean dehydration.
Disease and insect resistance in the tomato.
Effects of spacing, types of training, fertilizing, and cultural management on the yield and quality of grapes.
Growth promoting chemicals in relation to fruit set and yield of certain horticultural crops.
Effect of moisture levels on the quality of fresh and processed potatoes, cabbage, tomatoes and strawberries.
Modified atmosphere holding and storage of vegetables.
Disease of carnations.
A study of the external and internal factors affecting the abscission of flower buds of the gardenia.
Methods of handling of Rome Beauty apples for storage.
Marketability of fresh fruits and vegetables.
Mineral nutrition of fruit trees with particular reference to potassium, magnesium and baron.
Influence of differential nitrogen fertilization upon the leaf, fruit size, and yield of Baldwin, Delicious and Stayman apples.
Eradication or control of weeds and other undesirable plants.
Potential value of pear varieties for North Central states.
Effect of adding certain vitamins of the B-complex singly and in several combinations on mushroom production and on their vitamin content.
Yields and relationships of various grades of processed fruit and vegetables.
Development of soil structure suitable for potatoes in silt loam.
Response of the peach to different cultural practices and rates of growth of nitrogen fertilization.
Evaluating insect resistance in varieties and strains of potato.
Black raspberry and red raspberry behavior under different culture.
Suitability of Ohio grown fruit and vegetable varieties for processing.
Irregular fruit setting in several representative horticultural plants.

POULTRY SCIENCE

Pastures for chickens.
Egg production as affected by different sources of calcium with and without hard grit.
Rations and methods of feeding pullet layers.
Growth of chickens indoors as affected by the rotation and management of the floor litter.
Hormone residues in poultry treated with diethyl stilbestrol or fed active oestrogenic compounds.
Marketing eggs under different methods in the state of Ohio.
Methods of minimizing losses in quality of poultry products.
Sources of poultry products distributed by the various types of marketing.
Factors in built-up litter responsible for reduction of mortality in chickens.
Effect of built-up litter on the oocysts of avian coccidia.
Nutritional factors affecting the production and hatchability of hens' eggs.
Nutritional significance of built-up poultry litter.
Chore labor in handling feed.
Fundamental factors affecting the development of dairy calves.

VETERINARY SCIENCE

Application of a method to differentiate between the agglutinin titers of Brucellosis vaccinated and infected cattle.
Application of a new, composite-milk test as a screening method for identification of Brucellosis infected dairy herds.
Calfhood Brucellosis vaccination—duration of resistance.
Investigations on methods for modification of anti-hog cholera serum.
Fundamental factors affecting the development of dairy calves.
Effect of built-up litter on the oocysts of avian coccidia.
Mastitis of cattle.

STATION PUBLICATIONS

BULLETINS

Title	No. Pages	No. Copies
Analysis of hog prices in Ohio	44	3,000
Soybean oilmeal for pigs	72	4,500
69th Annual Report, O.A.E.S.	96	3,750
Cracked eggs and their economic importance to Ohio	20	3,500
Cost and efficiency of collecting eggs from farms in Ohio	20	4,000
Ohio farm real estate prices	40	3,500
Use of automatic washers	44	5,000
Ohio maple syrup	56	7,500
Agricultural statistics in Ohio	48	3,000
Soil conservation problems and achievements	56	12,000
Ohio sawmill directory	92	3,000
Agronomy handbook, O.A.E.S.	212	6,000

RESEARCH CIRCULARS

Ohio MR17, a mosaic resistant cucumber	8	3,000
Trials of sweet corn for fresh market	8	3,000
Corn performance experiments in Ohio	88	3,500
Hill grassland for beef production	12	3,000
Ascorbic acid in market milk	8	3,000
Status of Ohio peach trees	8	3,000

SPECIAL CIRCULARS

Oak wilt in Ohio	4	15,000
Experiment Station staff list	8	3,000
Livestock bloat on pasture	4	2,500
Telephone directory of O.A.E.S.	20	500
Guide to research at O.A.E.S.	64	7,500
Your Experiment Station	12	10,000

DEPARTMENTAL SERIES

Ohio crop recommendations	8	6,000
Supplemental nitrogen on corn	4	3,250
Mulching corn with manure	4	2,500
Sawdust as a soil amendment	2	500

BI-MONTHLY MAGAZINE

Farm and Home Research (Six Issues)	112	126,000

OHIO AGRICULTURAL EXPERIMENT STATION
STATEMENT OF INCOME AND EXPENDITURES FOR FISCAL YEAR ENDING JUNE 30, 1952

	HATCH	ADAMS	PURNELL	BANKHEAD-JONES	RESEARCH & MARKETING	TOTAL ALL OTHER FUNDS
Balance July 1, 1951	$ 0	$ 0	$ 0	$ 0	$ 55,901.72	$ 411,992.55
Appropriation for Year	15,000.00	15,000.00	60,000.00	118,853.05	148,264.53	1,475,286.76
TOTAL	$15,000.00	$15,000.00	$60,000.00	$118,853.05	$204,166.25	$1,887,279.31
Expenditures						
Personal Service	$12,580.80	$14,246.38	$53,922.87	$100,696.90	$142,013.46	$ 782,527.67
Travel	1,116.28		1,881.31	1,535.49	5,396.99	14,220.49
Transportation	24.40		6.87	89.58	183.55	5,748.57
Communication					360.00	9,177.44
Rents and Utilities			51.29	321.00	1.28	21,670.49
Printing and Binding			41.60		398.74	9,678.61
Other Contractual Services			92.32	573.41	1,181.30	38,556.01
Supplies and Materials	199.73	495.47	2,700.28	4,808.51	7,739.79	315,120.58
Equipment	1,078.79	258.15	1,303.46	9,237.60	40,886.20	76,068.52
Lands and Structures				1,590.56	6,004.94	260,824.05
Funds lapsed and unavailable for use						
Total Expenditures	$15,000.00	$15,000.00	$60,000.00	$118,853.05	$204,166.25	$1,533,592.43
Balance June 30, 1952	0	0	0	0	0	353,686.88
TOTAL	$15,000.00	$15,000.00	$60,000.00	$118,853.05	$204,166.25	$1,887,279.31

TOURS, FIELD DAYS AND VISITING GROUPS

During the year about 16,000 individuals were recorded as visitors.

The following is a summary of visiting groups:

NO. OF GROUPS	TYPE OF GROUP	ATTENDANCE
11	Garden and Farm Women's Clubs	306
10	Vocational Agriculture Groups	540
8	Veterans Classes	146
15	Grade and High School Students	636
4	College Students	296
15	Special Groups	1,277
13	Miscellaneous Groups	446
23	Miscellaneous Meetings	719
11	STATION FIELD DAYS	10,495
6	Field Days on Outlying Farms	775
6	Canadian Groups	172
	Foreign Visitors	55
	O.S.U. Foreign Students	26
	Recorded out-of-state Visitors	9
122	Total	15,898

RADIO PROGRAMS

The Station broadcasted a total of 195 programs, distributed as follows:

WWST, Wooster (live shows)	52	WLW, Cincinnati	13
WHKC, Columbus	5	WRFD, Worthington	57
WOSU, Columbus	35	WGAR, Cleveland	20
KDKA, Pittsburgh	5	Miscellaneous	6
WSPD-TV, Toledo	1		

Ohio Network ("The Ohio Story")—Oak Wilt Research at OAES

Every department provided several programs each. A total of 52 staff members participated and covered all phases of research work.

LITERATURE CITATIONS

Alban, E. K. and C. J. Willard. Chemical for Weed Control. Pesticide News, Vol. 5, No. 1, 10-20. 1952. (Horticulture)

————. Chemical Weed Control in Asparagus. Proc. 6th Annual Meeting North Central Weed Control Conference, pp. 34-36. 1951. (Horticulture)

———— and R. C. Scott. Garden-fresh sweet corn. Trade papers of National Ice Industries. June 1952. (Horticulture)

————. Chemical Weed Control in Commercial Vegetable Crop Production. 37th Annual Proc. of Ohio Veg. and Potato Growers Assoc., pp. 163-175. 1952. (Horticulture)

Anderson, W. R. Ohio Maple Syrup—Some Factors Influencing Production. Res. Bull. 718. August 1951. (Forestry)

Andrews, Wade H. Migration Within Ohio, 1935-40: A Study in the Redistribution of Population. In Rural Sociology Vol. 17. June 1952. (Agricultural Economics and Rural Sociology)

Bachtell, Myron A. Return More Than You Use to Keep Ahead on Phosphoric Acid. Farm and Home Research, Vol. 36, No. 271. July-August, 1951. (Agronomy)

———— and Garth W. Volk. Rock Phosphate Results Inferior to Those of Superphosphate. Farm and Home Research, Vol. 36, No. 271. July-August, 1951. (Agronomy)

————. Cropping System is Important in Evaluating Fertilizer Program. Farm and Home Research, Vol. 36, No. 272. September-October, 1951. (Agronomy)

————. Mineral Management of Soils Helps Maintain Fertility for Profitable Crop Production. Farm and Home Research, Vol. 36, No. 273. November-December, 1951. (Agronomy)

————. Cornstalks. Farm and Home Research, Vol. 37, No. 276. May-June, 1952. (Agronomy)

————. Hill Grassland for Beef Production. O.A.E.S. Research Circular 15. April 1952. (Agronomy)

————. Meadows Must Be Fed to Keep Yields High. The Ohio Farmer. January 19, 1952. (Agronomy)

————. High Fertility, High Production. News Flashes—The Ohio Farm Bureau. (Agronomy)

Baker, R. H. Planning Dairy Chores Can Save 19 Working Days During Year. Ohio Farm and Home Research. March-April, 1952. (Agricultural Economics and Rural Sociology)

————. Farm Income Tax Rates Nine Percent Higher for 1952. Ohio Farmer. December 15, 1952. (Agricultural Economics and Rural Sociology)

Baldwin, C. S. and N. S. Fechheimer. Death Dealing Genes. C.O.B.A. Newsletter, 5 (5): May 1952.

Barnes, E. E. Topdressing Wheat With Nitrogen. Farm and Home Research. November-December, 1951. (Agronomy)

————. Sawdust as a Soil Amendment. Agronomy Dept. Series No. 126. April 1952. (Agronomy)

Baumer, E. F. Are Regional Federal Market Orders in the Picture? Published in the report of the Seventh Annual Milk Marketing Conference. (Agricultural Economics and Rural Sociology)

————. A Method for Adjusting Milk Transportation Rates. A mimeograph bulletin. (Agricultural Economics and Rural Sociology)

————. Handbook of Dairy Statistics. A mimeograph by North Central Regional Fluid Milk Committee. (Agricultural Economics and Rural Sociology)

————. An Analysis of the Tri-State Milk Market. A mimeograph. (Agricultural Economics and Rural Sociology)

Beattie, James M. A Summary of Three Years Work With Foliage Applications of Urea. Proc. Ohio State Hort. Soc. 105:86-91. 1952. (Horticulture)

———— and W. P. Judkins. Status of Ohio Peach Trees With Respect to Certain Plant Elements. Ohio Agr. Exp. Sta. Res. Circ. 17. 1952. (Horticulture)

Bell, D. S., W. D. Pounden, B. H. Edgington, and O. G. Bentley. Psorergates Ovis—A Cause of Itchiness in Sheep. Jour. Amer. Vet. Med. Assoc. pp. 117-120. March 1952. (Animal Science)

————. A Sheep Program for Eastern Grassland Agriculture. Proceedings—Interregional Livestock Production and Marketing Conference. Jackson Mills, W. Va. Ext. Ser., U.S.D.A. November 1952. (Animal Science)

————. Sheep Research Program and Some Results. Sheep Day, O.A.E.S. Mimeograph Series, No. 76. 1952. (Animal Science)

Bentley, Orville G., and P. H. Phillips. The Effect of a Manganese Deficiency in the Chick on the Uptake of Inorganic Phosphate by Liver Homogenates, In Vitro. Arch of Biochemistry and Biophysics, 32, 338. July 1951. (Animal Science)

————, B. H. Edgington, W. D. Pounden, and D. S. Bell. Psorergates Ovis—A Cause of Itchiness in Sheep. Jour. of Amer. Vet. Med. Assoc. 70, 117. March 1952. (Animal Science)

————. Some Factors that Influence the Response to Vitamin B_{12} and Antibiotics. Proc. Ohio Anim. Nutr. Conf. November 1951. (Animal Science)

————. Good Hay for Steers Will Save You Money. Ohio Farmer. March 1952. (Animal Science)

————, C. H. Hunt and T. Hershberger. Factors Affectinfi the Synthesis of Certain Members of the Vitamin B-Complex in an Artificial Rumen. Fed. Proc. 11, 233. 1952. (An Abstract). (Animal Science)

————, Anthony Latona, Peter DePaul and C. H. Hunt. Factors Affecting the Digestibility of Cellulose of Poor Quality Hay. Jour. of Anim. Sci. 10, 1038. 1951. (An Abstract). (Animal Science)

————, V. D. Chamberlin and D. C. Kennard. Mineral Additions to Built-up Litter Reduce Moisture Content and Ammonia Loss. Farm and Home Research, 36, 86. November-December, 1951. (Animal Science)

————, D. C. Kennard and V. D. Chamberlin. Built-up Litter's Value Estimated at $20.00 a Ton. Farm and Home Research 37, 14. January-February, 1952. (Animal Science)

Blackman, C. L. and P. Ellsworth. Milking; Safe, Sane, and Sanitary. Bull. Agr. Ext. Serv. O.S.U. No. 316. August 1952.

Blosser, R. H. Regional Publication—"Conservation Problems and Achievements on Selected Midwestern Farms." North Central Regional Pub. No. 23, Ohio Agr. Exp. Sta. Spec. Circ. No. 86. July 1951. (Agricultural Economics and Rural Sociology)

————. "Problems Encountered by Farmers in Applying Soil Conservation Practices in Ohio." Dept. of Agr. Econ. and Rural Soc. Ohio State Uni. and Ohio Agr. Exp. Sta., Mimeo. Bull. No. 227. August 1951. (Agricultural Economics and Rural Sociology)

Borst, H. L. An Appraisal of the Opportunities for Grassland Farming in Ohio. Paper read at regional meeting of the Friends of the Land, Cleveland, March 12, 1952. Published in spring issue of the Land Letter. (Agronomy)

————, M. A. Bachtell and Paul Gerlaugh. Hill Grassland for Beef Production. O.A.E.S. Res. Circ. 15. April 1952. (Agronomy)

———— and G. W. Volk. Mulching Corn With Manure for Erosion Control. O.A.E.S. Agron. Series Circ. 125. April 1952. (Agronomy)

————. Soil Preparation in Establishing Grass on Erodible Hill Land. Paper presented at Sixth International Grassland Congress, State College, Penna. August 1952. Pub. in Proc. of the Congress. (Agronomy)

Brakel, W. J., D. C. Rife, and S. M. Salisbury. Factors Associated With the Duration of Gestation in Dairy Cattle. Jour. Dairy Sci. 35:179-194. 1952.

Brown, H. D. Gardens Overseas. Market Growers Journal, p. 12. October 1951. (Horticulture)

————. Scientists Seek New Uses for Research. Market Growers Journal, p. 9. November 1951. (Horticulture)

————. Gardens Overseas. Market Growers Journal, p. 33. December 1951. (Horticulture)

————. How to Evaluate Propaganda. Market Growers Journal, p. 14. April 1952. (Horticulture)

———— and Murad R. Grice. Varietal Characteristics Influence Browning of Frozen Peaches. Food Engineering. pp. 131-139. January 1952. (Horticulture)

Brown, W. N. and W. A. Huelsen. Physical Damage to Sweet Corn Caused by Mechanical Harvesting and Subsequent Processing. Univ. of Ill., Agr. Exp. Sta. Bul. 561, 45 pp. 1952. (Horticulture)

Chadwick, L. C. Berberis Thunbergi Compacta. Am. Nur. July 1, 1951. (Horticulture)

————. Euonymous Europaeus. Am. Nur. August 1, 1951. (Horticulture)

————. Viburnum Rufidulum. Am. Nur. August 15, 1951. (Horticulture)

————. Deutzia Crenata. Am. Nur. September 1, 1951. (Horticulture)

————. Fagus Sylvatica Rotundifolia. Am. Nur. September 15, 1951. (Horticulture)

————. Cereis Canadensis Alba. Am. Nur. October 1, 1951. (Horticulture)

————. Carya Ovata. Am. Nur. October 15, 1951. (Horticulture)

———. Buddleia Alternifolia. Am. Nur. November 1, 1951. (Horticulture)
———. Prunus Maritima. Am. Nur. December 1, 1951. (Horticulture)
———. Tsuga Diversifolia. Am. Nur. December 15, 1951. (Horticulture)
———. Amelanchier Grandiflora. Am. Nur. January 1, 1952. (Horticulture)
———. Prunus Glandulosa rubescens, sinensis. Am. Nur. January 15, 1952. (Horticulture)
———. Pinus Mugo Pumilio. Am. Nur. February 1, 1952. (Horticulture)
———. Rhus Aromatica. Am. Nur. February 15, 1952. (Horticulture)
———. Euonymus Fortunei Vegetus. Am. Nur. March 1, 1952. (Horticulture)
———. Magnolia Virginiana. Am. Nur. March 15, 1952. (Horticulture)
———. Picea Abies Clanbrasiliana. Am. Nur. April 1, 1952. (Horticulture)
———. Davidia Involucrata. Am. Nur. April 15, 1952. (Horticulture)
———. Crataegus Phaenopyrun. Am. Nur. May 1, 1952. (Horticulture)
———. Clematis Montana Rubens. Am. Nur. May 15, 1952. (Horticulture)
———. Rhododendron Arbutifolium. Am. Nur. June 1, 1952. (Horticulture)
———. Rosa Harrisoni. Am. Nur. June 15, 1952. (Horticulture)

Chamberlin, V. D. Mineral Additions to Built-up Litter Reduce Moisture Content and Ammonia Loss. Farm and Home Research. November-December, 1951. (Dairy Science)
———. Profitable Broilers from Leghorn Cockerels. Farm and Home Research. January-February, 1952. (Dairy Science)
———. Replacement Pullets. Farm and Home Research. January-February, 1952. (Dairy Science)
———. Roaster Chickens. Farm and Home Research. May-June, 1952. (Dairy Science)
———. Good Eggs on Ladino Clover. Farm and Home Research. July-August, 1952. (Dairy Science)

Cray, R. E. Factors Affecting the Price of Turkeys. U. S. Egg & Poultry Magazine. February 1952.

Comin, Donald. Cauliflower and Broccoli Production in Ohio. 37th An. Proc. of the Ohio Veg. and Pot. Growers Assoc. pp. 123-126. 1952. (Horticulture)
———. Harvesting and Handling Fruit. 105th An. Proc. of the Ohio State Hort. Soc. pp. 110-112. 1952. (Horticulture)
———. Potato Storage. Ohio Farm and Home Research, Vol. 37, No. 279. pp. 90-91. November-December, 1952. (Horticulture)

Cutright, C. R. 1951. Late Season Control of European Red Mite. Jour. Econ. Ent. 44(3):363-367. (Entomology)
———. 1952. Efficient Spraying With Special Reference to the Reduction of Spray Costs. Ohio State Hort. Soc. Proc. 105: 32-38. (Entomology)
——— and H. F. Winter. 1952. Concentrate Spraying Boon to Fruit Growers. The Ohio Farmer 209(4):20-21. February 16. (Entomology)
———. 1952. Acaricides, Old and New. 7th Ann. Meet. North Central States Branch Amer. Assn. Econ. Ento. p. 17. (Entomology)

Davis, R. R. and C. J. Willard. Both Cultural and Chemical Practices Needed to Prevent Crabgrass in Lawns. Ohio Farm and Home Research, Vol. 37, No. 274. January-February, 1952. (Agronomy)
——— and J. L. Haynes. Do Your Beef Cattle Get the Right Kind of Pasture? The Ohio Farmer, Vol. 209, No. 7. April 5, 1952. (Agronomy)
———. Physical Condition of Putting-green Soils and Other Environmental Factors Affecting Greens. U.S.D.A. Jour. and Turf Management, Vol. V, No. 1. April 1952. (Agronomy)

Docton, F. L., L. C. Ferguson, E. J. Lazear, and Fordyce Ely. The Antigenicity of Bovine Spermotozoa. Jour. Dairy Sci. 35:706-709. 1952.

Dunham, W. E. 1952. Uninterrupted Brood Rearing. Amer. Bee Jour. 92(3):100-101. (Entomology)

Edgington, B. H., D. S. Bell, W. D. Pounden, and O. G. Bentley. Psorergates ovis—A Cause of Itchiness in Sheep. Jour. Am. Vet. Med. Assn., Vol. 120, No. 900. pp. 117-120. March 1952.
———, N. B. King, and W. G. Venzke. Studies on the Experimental Treatment of Bovine Brucellosis. Am. Jour. Vet. Res., Vol. 13, No. 47. pp. 152-158. April 1952.

Ellenwood, C. W. Public Picking of Fruit. Ohio Farmer. July 21, 1951. p. 18. (Horticulture)
———. The Strawberry Touch. Ohio Farmer. October 20, 1951. p. 10. (Horticulture)
———. Plums and Grapes. Ohio Farmer. November 17, 1951. pp. 38-39. (Horticulture)
———. Pruning. The Rural New Yorker. December 1, 1951. pp. 702-704. (Horticulture)
———. Time to Prune. Ohio Farmer. January 5, 1952. pp. 14-15. (Horticulture)
———. Removal of Cull Apple Trees. Ohio Farmer. February 2, 1952. p. 22. (Horticulture)
———. Strawberries in the Home. Ohio Farmer. March 1, 1952. pp. 24-25. (Horticulture)
———. Poison Ivy Control. Ohio Farmer. April 5, 1952. (Horticulture)
———. Chemical Thinning of Apples. Ohio Farmer. April 19, 1952. pp. 24-25. (Horticulture)
———. Chemical Thinning Sprays. Ohio State Hort. Soc. Ann. Proc. 1952. pp. 70-73. (Horticulture)
——— and C. J. Willard. Poison Ivy in Orchards Reduced by Spraying. Ohio Farm and Home Research. March-April, 1952. pp. 19-28. (Horticulture)
——— and Freeman S. Howlett. Apple Thinning is Speeded by Using Chemical Sprays. Ohio Farm and Home Research. March-April, 1952. pp. 30-31. (Horticulture)

Ely, Fordyce. Real Progress in Breeding Better Dairy Cattle. Ohio State Grange Monthly, 55(9):4. 1952.

Falconer, J. I. Ohio's Agriculture. The Arizona Cattlemen. September 1952. (Agricultural Economics and Rural Sociology)
———. Station News Item. November 1951. (Agricultural Economics and Rural Sociology)
———. The Grange in Public Affairs (3 articles). Ohio State Grange Monthly. March, April and May, 1952. (Agricultural Economics and Rural Sociology)
———. Better Grass, More Grain. Ohio Farmer. December 1951. (Agricultural Economics and Rural Sociology)
———. Estimated Gross Cash Income to Ohio Farmers. Dept. of Agr. Econ. Bull. No. 228. October 1951. (Agricultural Economics and Rural Sociology)
———. Price and Wage Trends. Farm and Home Research. (Each Issue). (Agricultural Economics and Rural Sociology)
———. Agricultural Production Attainable by 1955 in Ohio. Dept. of Agr. Econ. Mimeo. Bull. No. 232. January 1952. (Agricultural Economics and Rural Sociology)

Fechheimer, N. S., T. M. Ludwick, and Fordyce Ely. A Method For the Intrauterine Insemination of Certain Cows. Jour. Dairy Sci. 35:808-812. 1952.

Ferguson, L. C. Serological Techniques Used in Blood Typing. Rept. of the Second Blood Typing Conference. p. 18-20. November 1952.
———. Genetics of the Bovine Lytic System. Rept. of the Second Blood Typing Conference. p. 47. November 1952.

Gilmore, L. O., J. F. Long, G. M. Curtis and D. C. Rife. The Bovine Protein-bound Blood Iodine and Its Relation to Age and Breed. Abstract. Jour. Anim. Sci. 10:1027-1028. 1951. (Dairy Science)
———. Dairy Cattle Breeding. J. B. Lippincott Co., Chicago. pp. 1-594. 173 illus. 1952. (Dairy Science)
———, J. F. Long, J. W. Hibbs and Fordyce Ely. The Effect of Thyroprotein Feeding on the Level of the Protein-bound and Inorganic Serum Iodine in the Bovine. Abstract. Jour. Dairy Sci., 35:503. 1952. (Dairy Science)

Gould, Wilbur A. Assure Cherry Quality With 6-point Checkup. Food Packer, Vol. 32 (7):32-33, 45. 1951. (Horticulture)
——— and Fred A. Krantz, Jr. Simple Device Boosts Accuracy of PMA Color-grading Device. Food Packer, Vol. 32(7):24-25, 45. 1951. (Horticulture)
———. High Quality Tomatoes, Juice, Pulp—Step-by-step. Food Packer, Vol. 32(8):28-29, 46. 1951. (Horticulture)
———. Process Peaches Non-stop to Get Highest Quality. Food Packer, Vol. 32(9): 22-23, 43-44. 1951. (Horticulture)
———. Keep Your Eye on Whole Kernel All the Way From Field to Can. Food Packer, Vol. 32(10):38-39. 1951. (Horticulture)
———. Wash, Clean, and Sort Pumpkin Carefully for a Quality Pack. Food Packer, Vol. 32(10):26-27, 40, 57. 1951. (Horticulture)
———. Quality Control on Beets Includes All Important Color Considerations. Food Packer, Vol. 32(12)38-39, 46-47. 1951. (Horticulture)
———. There's More Emphasis on Quality. Insure It With a Good Laboratory. Food Packer, Vol. 33(1):54, 56. 1952. (Horticulture)

———————. Here is the Basic Equipment Needed for Good Quality Control Laboratory. Food Packer, Vol. 33(2):34-35, 65. 1952. (Horticulture)
———————. Job of Quality Control Made Easier When the Growers and Processors Get Together on Their Responsibilities. Food Packer, Vol. 33(3):34, 60-61. 1952. (Horticulture)
———————. Tenderness Vital to Canned Asparagus. Food Packer. Vol. 33(4):30-32, 51, 54. 1952. (Horticulture)
———————. Best Variety, Speed in Handling, and Good Packages Necessary for Quality in Frozen Strawberries. Food Packer, Vol. 33(5):36-38. 1952. (Horticulture)
———————. Processing Spinach for Freezing. Food Packer, Vol. 33(6):36-38. 1952. (Horticulture)
———————. Maturity and Variety Affect Quality. Food Packer, Vol. 33(6):28-29, 62. 1952. (Horticulture)
Haynes, J. L. Seed Legumes by the Band Method. Hoard's Dairyman 97:4:pp. 162, 188-9. February 1952. (Agronomy)
——————— and R. R. Davis. Do Your Beef Cattle Get the Right Kind of Pasture. The Ohio Farmer 209:7. April 1952. (Agronomy)
———————. New Band Seeding Method Promises Yield Boost. 1952 Ohio Farm Bureau Fertilizer Flashes. (Agronomy)
———————. Drill Attachments for Band Seeding Legumes. Ohio Farm and Home Research 36:273, 85. November-December, 1951. (Agronomy)
Henning, George F. and M. B. Evans. Feeder Cattle Situation in Southeastern Ohio. Mimeo. Bull. No. 237. (Agricultural Economics and Rural Sociology)
——————— and M. B. Evans. Financing of Feeder Livestock in Ohio. Res. Bull. No. 712. (Agricultural Economics and Rural Sociology)
———————. Some Aspects of the Financing of Farm Cooperatives. Jour. of Farm Economics. December 1952. (Agricultural Economics and Rural Sociology)
———————. Looking Ahead at Cooperatives for the Next 25 Years. News For Farm Cooperatives. November 1952. (Agricultural Economics and Rural Sociology)
Hibbs, J. W., C. F. Monroe and R. G. Washburn. Soybeans in Dairy Rations. Ohio Farm and Home Research, 36:61-62. July-August, 1951. (Dairy Science)
———————, W. D. Pounden and W. E. Krauss. Studies on Milk Fever in Dairy Cows: III. Further Studies on the Effect of Vitamin D on Some of the Blood Changes at Parturition and the Composition of Colostrum in Normal and Milk Fever Cows. Jour. Dairy Sci. 34(9):855-864. 1951. (Dairy Science)
———————. Milk Substitutes in Dairy Calf Feeding. Proc. Ohio Anim. Nutr. Conf. pp. 22-32. 1951. (Dairy Science)
———————, C. F. Monroe and R. G. Washburn. Soybeans in Dairy Rations. Hoard's Dairyman. p. 962. December 1951. (Dairy Science)
——————— and C. R. Weaver. Effect of Spittlebug Infestation on the Nutritive Value of Alfalfa and Red Clover. Jour. Econ. Ent 45:626-628. 1952. (Dairy Science)
———————. Milk Substitutes in Dairy Calf Feeding. Feedstuffs, 24:30-31. January 1952. (Dairy Science)
——————— and W. D. Pounden. Raising Calves on the Ohio High Roughage System. Hoard's Dairyman. p. 118. February 10, 1952. (Dairy Science)
——————— and ———————. Better Calves at Lower Cost from "Ohio High Roughage System". Ohio Farmer. pp. 20-21. March 1, 1952. (Dairy Science)
——————— and R. G. Washburn. Ascorbic Acid and Riboflavin Content of Market Milk. Ohio Agr. Exp. Sta. Res. Circ. 16. April 1952. (Dairy Science)
———————, J. F. Long, L. O. Gilmore and Fordyce Ely. The Effect of Thyroprotein Feeding on the Level of the Protein-bound and Inorganic Serum Iodine in the Bovine. Abstract. Jour. Dairy Sci. 35:503. 1952. (Dairy Science)
Hill, R. G., Jr. and R. R. Barton. Raspberry Varieties. Ohio Farm and Home Research. January-February, 1952. (Horticulture)
——————— and R. R. Barton. Strawberries. Ohio Farm and Home Research. March-April, 1952. (Horticulture)
———————. Small Fruit Varieties for Ohio. Proc. Ohio State Hort. Soc. 105:151-156. 1952. (Horticulture)
———————. Sod as a Soil Management Practice for Peaches. Proc. Ohio State Hort. Soc. 105:104-109. 1952. (Horticulture)
Hoeflin, Dr. Ruth. The Effect on Child Rearing Practices of the Various Types of Child Care Information Obtained and/or Used by Ohio Farm Families. Report on Doctoral Dissertation. Jour. of Home Econ. Vol. 43, No. 10. pp. 796-797. December 1951. (Home Economics)
———————. Selection of a Sample of Rural Preschool Children. Rural Soc., Vol. 17, No. 1. March 1952. (Home Economics)
———————. Living With Our Children—Book Review for Lillian Gilbreth for Her Book. Marriage and Family Living. April 1952. (Home Economics)
———————. A Look At Child Development Literature. Marriage and Family Living. April 1952. (Home Economics)
———————. The Use of the Open-end Interview in Family Life Study. Rural Soc., Vol. 17, No. 2. June 1952. (Home Economics)
Hoffman, I. C. Greenhouse Growers Turn to Cool Season Crops. Market Growers Journal. Vol. 81, No. 1. pp. 22-52, 53. 1952. (Horticulture)
———————. Popular Greenhouse Vegetable Varieties. Market Growers Journal. Vol. 81, No. 2. p. 14 and 35. 1952. (Horticulture)
———————. How to Start in the Greenhouse Business. Market Growers Journal. Vol. 81, No. 4. p. 10. 1952. (Horticulture)
———————. Two Chief Ways to Water Tomatoes Under Glass. Market Growers Journal. Vol. 81, No. 5. p. 25. 1952. (Horticulture)
———————. 125 Growers Attend Ohio Greenhouse Vegetable Day at Wooster. Market Growers Journal. Vol. 81, No. 7. pp. 18 and 19. 1952. (Horticulture)
———————. New Soil Steaming System Installed in Ohio Experiment Station Greenhouses. Market Growers Journal. Vol. 81, No. 9. pp. 26 and 27. 1952. (Horticulture)
Howlett, Freeman S. Influence of Industrial Growth Upon Scientific Fruit Production. Translation). Sci. and Nat. (Belgrade, Yugoslavia) IV(8-9):245-250. 1951. (Horticulture)
———————. New Development in Research With American Fruits. (Translation). Sci. and Nat. (Belgrade, Yugoslavia IV (8-9): 250-255. 1951. (Horticulture)
———————. Places are People. Ohio State Grange Monthly LIV (12):4-6, 9. 1951. (Horticulture)
———————. Growing Fruit in Europe. (Abstract) Proc. Ohio State Hort. Soc. 105th Meet. 91. 1952. (Horticulture)
———————. Summary of Pear Panel Dissussion. Proc. Ohio State Hort. Soc. 105th Ann. Meet. 103-104. 1952. (Horticulture)
———————. Horticulture Across the Seas. (Abstract). 37th Ann. Proc. Ohio Veg. and Pot. Growers Assoc. 43-44. 1952. (Horticulture)
———————. Seedless Tomatoes. Plants and Gardens (Brooklyn Botanic Garden) New Series 8(1):18-20. 1952. (Horticulture)
——————— and T. E. Fowler. Franklin Apple is Receiving Favorable Consumer Comment. Farm and Home Research 37(274) 9-11. 1952. (Horticulture)
———————. Fruit Production Program in Yugoslavia. Foreign Agriculture XVI:12-16. 1952. (Horticulture)
——————— and C. W. Ellenwood. Apple Thinning is Speeded by Using Chemical Sprays. Farm and Home Research 37(275) 30-31. 1952. (Horticulture)
——————— and T. E. Fowler. Franklin Apple is Receiving Favorable Consumer Comment (Reprinted from Farm and Home Research). Fruit Varieties and Horticultural Digest 6:67-72. 1952. (Horticulture)
———————. Pruning the Apple Tree. New York Times. March 1952. (Horticulture)
Hunt, C. H., Lorraine D. Rodriguez, Sylvia Taylor, and R. M. Bethke. The Effect of Maturity on the Variation in Protein, Niacin, and Pantothenic Acid Content of Corn Hybrids. Cereal Chem. 29, 142-147. March 1952. (Animal Science)
———————, O. G. Bentley, and T. Hershberger. Factors Affecting the Synthesis of Certain Members of the Vitamin B-Complex in an Artificial Rumen. Fed. Proc. 11, No. 1, Part I, 233. March 1952. (Animal Science)
———————, Orville G. Bentley, Anthony Latona, and Peter De Paul. Factors Affecting the Digestibility of Cellulose of Poor Quality Hay. Jour. Anim. Sci. 10, 1038. 1951. (Abstract). (Animal Science)
King, N. B. Capillary Tube Milk-Agglutination Test. Am. Vet. Med. Assn. Proc. Book, 88th An. Meet. pp. 224-225. August 1951.
———————. A New Test for the Diagnosis of Brucellosis. The Capillary Tube Milk Test. Ohio State Vet. Med. Assn. Yearbook. pp. 139-142. November 1951.
———————, W. G. Venzke, and B. H. Edgington. Studies on the Experimental Treatment of Bovine Brucellosis. Am. Jour. of Vet. Res., Vol. XIII, No. 47. pp. 152-158. April 1952.
Kiplinger, D. C. and Henry Bresser. Some Factors Affecting Multiple Bud Formation on Azaleas. Proc. Amer. Soc. Hort. Sci. 57:393-395. 1951. (Horticulture)
——————— and Sylvester Rose. Year Around Flowering of Potted Chrysanthemums. Proc. Amer. Soc. Hort. Sci. 58:347-349. 1951. (Horticulture)

Klosterman, Earle W., M. L. Buchanan, D. W. Bolin, and F. M. Bolin. Levels and Sources of Protein in Rations for Pregnant Ewes. Jour. Anim. Sci. 10 (1) 257. 1951. (Animal Science)

————, W. E. Dinusson, and D. W. Bolin. Vitamin B_{12} and Streptomycin for Rat Growth. (Abstract). Sci. Proc. 5, 36. 1951. (Animal Science)

————, ————, and M. L. Buchanan. Stilbestrol, Results of Its Use on Growing-Fattening Swine. (Abstract). N. D. Acad. Sci. Proc. 5, 36. 1951. (Animal Science)

————, D. W. Bolin, Robert E. Moreng, and R. L. Bryant. The Effect of Adding B_{12}, Folic Acid and Methionine to a Plant Protein Ration Low in Methionine. (Abstract). N. D. Acad. Sci. Proc. 5, 37. 1951. (Animal Science)

————, W. E. Dinusson, Earl L. Lasley, Glenn C. Holm, and M. L. Zuchanan. Cobalt, B_{12} (APF) and Meat Scraps for Growing-Fattening Swine. N. D. Bimon. Bull. 13, 146. 1951. (Animal Science)

————, D. W. Bolin, Earl L. Lasley, and W. E. Dinusson. The Effect of Methionine Supplementation Upon the Utilization of Pea and Alfalfa Proteins by Sheep. Jour. Anim. Sci. 10 (2) 439. 1951. (Animal Science)

————, Warren C. Whitman, D. W. Bolin, H. J. Klosterman, Kenneth D. Ford, Leroy Moomaw, D. G. Hoag, and M. L. Buchanan. Carotene, Protein and Phosphorus in Range and Tame Grasses of Western North Dakota. N. D. Agr. Exp. Sta. Bull. 370, 56 pages, illus. 1951. (Animal Science)

————, C. O. Claggett, H. J. Gorz, T. E. Stoa, and D. F. Eucloth. Prussic Acid Poisoning. N. D. Bimo. Bull. 14(2)65. 1951. (Animal Science)

————, W. E. Dinusson, Merle R. Light, and M. L. Buchanan. APF and Stilbestrol, What is Their Value for Growing and Fattening Lambs. N. D. Bimo. Bull. 14(2)67. 1951. (Animal Science)

————. Beef Pasture Acres Yield Profits. N. D. Bimo. Bull. 14(2) 67. 1951. (Animal Science)

————, W. E. Dinusson, and M. L. Buchanan. Stilbestrol, Effect of Subcutaneous Implantation on Growing Fattening Swine. Jour. Anim. Sci. 10(4)885. 1951. (Animal Science)

————, D. W. Bolin, and W. E. Dinusson. Effect of Trace Minerals and Methionine Upon the Utilization of Protein by Sheep. (Abstract). Jour. of Anim. Sci. 10(4)1052. 1951. (Animal Science)

————, W. E. Dinusson, Merle R. Light, and M. L. Buchanan. Preparation of Feeds; Grinding vs. Pelleting of Rations for Swine. Jour. of Anim. Sci. 10(4)1045. 1951. (Abstract). (Animal Science)

————, Merle R. Light, M. L. Buchanan, and D. W. Bolin. The Effect of Nutrition on Wool Pigmentation. (Abstract). Jour. of Anim. Sci. 10(4)1953. 1951. (Animal Science)

————. Pasture Has Cash Value. Dakota Farmer 72(2) 24. 1952. (Animal Science)

————, W. E. Dinusson, G. C. Holm, and M. L. Buchanan. Antibiotic Supplements in Rations of Growing-Fattening Pigs. N. D. Bimo. Bull. 14, 196. 1952. (Animal Science)

————, D. W. Bolin, K. Schlamp, and R. L. Bryant. Chick Growth Response to Different Levels of Methionine and Protein Supplements Added to a Low Methionine Diet. Poul. Sci. 31, 700. 1952. (Animal Science)

————, Richard P. King, D. W. Bolin, and W. E. Dinusson. The Determination of Cobalt in Feeds. (Abstract). Proc. N. D. Acad. Sci. 6, 19. 1952. (Animal Science)

Lamb, C. A. Protect Your Wheat Market—Grow the Proper Variety. The Ohio Farmer. September 1951. (Agronomy)

————. Ohio Soft Winter Wheat Tests Including Results of 1951. O.A.E.S. Agron. Ser. No. 127. May 1952. (Agronomy)

————. How Important is the Variety? 1952 Ohio Farm Bureau Fertilizer Flashes. (Agronomy)

Lazear, E. J. The Fractionation of Iso-immune Serum. Rept. of the Second Blood Typing Conference. p. 48-49. November 1952.

Long, J. F., L. O. Gilmore, J. W. Hibbs, and Fordyce Ely. The Effect of Thyroprotein Feeding on the Level of the Protein-bound and Inorganic Serum Iodine in the Bovine. Jour. Dairy Sci. 35:41. 1952.

————, ————, G. M. Curtis, and D. C. Rife. Bovine Protein-bound Serum Iodine and Its Relation to Age and Breed. Jour. Dairy Sci. 35:603-606. 1952.

Ludwick, T. M. and C. D. McGrew. Conception in Dairy Cattle. C.O.B.A. Newsletter, 5 (1): January 1952.

Martin, W. P. Some Toxic Effects Following Steaming of Greenhouse Soils. Proc. Ohio Veg. Pot. Growers Assoc. 36:173-175. July 1951. (Agronomy)

————, C. S. Slater, F. E. Broadbent, J. B. Page, G. S. Taylor, and R. W. Pearson. Report of the National Soil Structure-Organic Matter Work Group to the National Soil and Fertilizer Research Committee. Pub. by the Com. December 1951. 77 pages. (Agronomy)

————, F. W. Stevenson, J. D. Marks, and J. E. Varner. Electrophoretic and Chromatographic Investigations of Clay-adsorbed Organic Colloids: I. Proc. Soil Sci. Soc. Amer. 16: 69-72. 1952. (Agronomy)

————, G. S. Taylor, J. C. Engibous, and E. Burnett. Soil and Crop Responses from Field Applications of Soil Conditioners. Soil Sci. 73:455-471. 1952. (Agronomy)

————. Good Soil in 24 Hours. Farm Journal. February 1952. (Agronomy)

————. Maintaining Soil's Organic Matter Vital. Fertilizer Flashes of Ohio Farm Bureau. 1952. (Agronomy)

————, G. W. Volk, and G. S. Taylor. What is Krilium? Questions and Answers on New Soil Conditioner. Ohio Farm and Home Research 37:29. 1952. (Agronomy)

————, G. S. Taylor, J. C. Engibous, and E. Burnett. Soil and Crop Responses From Field Applications of Soil Conditioners. Soil Sci. 73:455-472. 1952. (Agronomy)

McGrew, C. D. Ohio Improves Its Grassland. Ohio State Grange Monthly, 55(7):4. 1952.

Mederski, H. J. Placing Supplemental Nitrogen on Corn. Agronomy Department Series 124. March 1952. (Agronomy)

————. A Comparison of Rock Phosphate and Superphosphate. Compilation of Phosphate Fertilizer Experiments in the North Central Region. 1951. (Agronomy)

————. The Effect of Phosphate Fertilizer Carrier and Level of Residual Soil Phosphorus on Yield and Phosphorus Uptake of Soybeans. Compilation of Phosphate Fertilizer Experiments in The North Central Region. 1951. (Agronomy)

Meteer, J. W. and R. L. Sarles. Cold Soaking Helps Utilize Non-durable Woods to Make Good Fence Posts. Ohio Farm and Home Research, Vol. 37, No. 276. May-June, 1952. (Forestry)

————. Tree Farmers Reap Woodland Profits for 40 Years. Ohio Farmer. May 17, 1952. (Forestry)

Miller, D. P., E. L. Dakan, and R. E. Cray. Amount Cause and Economic Importance of Cracked Eggs to Ohio Poultry Industry. Ohio Agr. Exp. Sta. Res. Bull. No. 709. November 1952.

Moore, Earl N. Profitable Broilers from Leghorn Cockerels. Farm and Home Research. January-February, 1952. (Dairy Science)

————. Coccidiosis Does Kill Poults. Turkey World. May 1952. (Dairy Science)

————. Lice and Mites Can Be Controlled. Broiler Growing. November 1952. (Dairy Science)

————. A New Coccidium of Turkeys, Eimeria Innocua, N. Sp. Cornell Veterinarian, Vol. XLII, No. 3. July 1952. (Dairy Science)

————. Blackhead (Histomoniasis) Is Still a Problem. New York Yearbook. 1953. (Dairy Science)

Moore, H. R. Ohio Farm Real Estate Prices. Res. Bull. 711. Ohio Agr. Exp. Sta. July 1951. (Agricultural Economics and Rural Sociology)

————. Ohio Maple Syrup. Res. Bull. 718. Ohio Agri. Exp. Sta. July 1951. (Agricultural Economics and Rural Sociology)

————. Farm Real Estate Values Doubled in Past Decade. Ohio Farm and Home Research. January-February, 1952. (Agricultural Economics and Rural Sociology)

————. Farmers Buy Most Land. News Release. March 1952. (Agricultural Economics and Rural Sociology)

————. "Pros" and "Cons" of a Constitutional Convention. Dept. of Agr. Econ, Mimeo. Circ. (12 pages). May 1952.

Moxon, A. L., George F. Gastler and Wm. T. McKean. Composition of Some Plants Eaten by Deer in the Black Hills of South Dakota. The Journal of Wildlife Management, Vol. 15, 352-357. October 1951. (Animal Science)

———— and William M. Rogoff. Cable Type Back Rubbers for Horn Fly Control on Cattle. Jour. of Econ. Ento., Vol. 45, 329-334. April 1952. (Animal Science)

————, Leslie E. Johnson, and R. L. Smith. Wintering Beef Cows on South Dakota Ranges. S. D. Agr. Exp. Sta. Bull. No. 419, 26 pages. May 1952. (Animal Science)

———— and E. L. Whitehead. Nitrate Poisoning. S. D. Agr. Exp. Sta. Bull. No. 424, 24 pages. June 1952. (Animal Science)

————. The Protein Composition of Feebar, Odessa, and Plains Barley Grown in South Dakota. Cereal Chemistry, Vol. 29, 18-29. January 1952. (Animal Science)

————. Trace Elements in Nutrition. Proc. Ohio Anim. Nutr. Conf. pp. 24-27. November 8 and 9, 1951. (Animal Science)

————————, Wm. M. Rogoff, and O. L. Olson. DDT in Cattle Sprayed and Cattle Treated With Cable Type Back Rubbers. Jour. of Anim. Sci., Vol. 10, p. 1078. (Abstract). November 1951. (Animal Science)

————————. Trace Elements in Nutrition. Feedstuffs, Vol. 24, 38-41. January 1952. (Animal Science)

Neiswander, C. R. Corn Borer Control in Corn Grown for Processing. Rept. of 21st An. Conf. Ohio Canners Assn. pp. 22-25. 1952. (Entomology)

————————. Fluctuations in Corn Borer Population Levels. 7th An. Meet. N. Central States Branch Amer. Assn. Econ. Ento. pp. 58-61. 1952. (Entomology)

Neiswander, R. B. Some Tree Pests in the Midwest. Nat. Shade Tree Conf. Proc. 27:83-92. 1951. (Entomology)

————————. Investigations of Nursery Insects During 1951. Ohio Nursery Notes 21(2):1-8. 1952. (Entomology)

————————. Emulsified DDT Sprays for Summer Control of Scale Insects. 7th An. Meet. N. Central States Branch Amer. Assn. Econ. Ent. pp. 86-87. 1952. (Entomology)

————————. Control of Mites on Woody Ornamental Plants. Jour. Econ. Ent. 45(3):373-376. 1952. (Entomology)

———————— and J. G. Rodriguez. Spruce Spider Mite Control on Ornamental Plants. Down to Earth 8(1):12-13. 1952. (Entomology)

Nelson, Kennard S. and Alex Laurie. Studies on Bacterial Wilt of Carnations. Amer. Soc. for Hort. Sci. 58:367-370. 1951. (Horticulture)

Patton, Mary Brown, Jane M. Leichsenring, Loana M. Norris, Sara Lamison, and Eva Donelson Wilson. The Effect of Level of Intake on Calcium and Phosphorus Metabolism in College Women. Jour. of Nutr. Vol. 45, No. 3. November 1951. (Home Economics)

————————. Utilization of Calcium from Lactate Gluconate, Sulfate, and Carbonate Salts by Young College Women. Abstracts of Doctoral Dissertations, No. 62, The Ohio State University Press. 1952. (Home Economics)

————————, Ercel S. Eppright, Abby L. Marlatt, and Milicent Hathaway. Dietary Study Methods. V. Some Problems in Collecting Dietary Information About Groups of Children. Jour. of Amer. Diet. Assn., Vol. 28, No. 1. January 1952. (Home Economics)

Polivka, J. B. Effect of Insecticides Upon Earthworm Populations. Ohio Jour. Sci. 51(4):195-196. 1951. (Entomology)

————————. Field Tests of Insecticides for Control of Japanese Beetle Larvae. Jour. Econ. Ent. 45(2):251-254. 1952. (Entomology)

————————. Control of the Northern Masked Chafer With Aldrin and Dieldrin. Jour. Econ. Ent. 45(2):347-348. 1952. (Entomology)

Pounden, W. D. Rumen Function and Health in Young Calves. Proc. 89th An. Meet AVMA. pp. 40-44. June 1952.

———————— and A. G. Danks. Demonstration of Collection of Rumen Samples for Examination and Transfusion. Proc. 89th An. Meet. AVMA. pp. 49-50. June 1952.

————————. Physiology of the Rumen as it Pertains to Bloat. Discussion of presentation by R. E. Nichols. Proc. A.V.M.A., 88th An. Meet. pp. 268-270. August 1951.

————————, J. W. Hibbs, and W. E. Krauss. Studies on Milk Fever in Dairy Cows. III. Further Studies on the Effect of Vitamin D on Some of the Blood Changes at Parturition and the Composition of Colostrum in Normal and Milk-Fever Cows. Jour. Dairy Sci. 34. pp. 855-864. September 1951.

————————. Ruminant Digestion and Health. (Abstract). Calif. Vet. 5. p. 22. November-December, 1951.

————————. A Veterinarian Looks at Dairy Cattle Disease Control. Proc. 19th An. Dairy Tech. Conf., Columbus, O. February 1952.

————————, D. S. Bell, B. H. Edgington, and O. G. Bentley. Psorergates ovis—A Cause of Itchiness in Sheep. J.A.V.M.A., 120. pp. 117-120. March 1952.

————————. Some Factors Affecting Rumen Function in Young Calves and Their Influence as Reflected in the Health of the Animals. Abst. of Doc. Dis. No. 62. The Ohio State Univ. Press. 1952.

————————, J. M. Amberson, and R. F. Jaeger. A Severe Mastitis Problem Associated With Cryptococcus neoformans in a Large Dairy Herd. Am. Jour. Vet. Res., 13. pp. 121-128. April 1952.

————————. Prophylaxis, Diagnosis and Therapy of Rumen Dysfunction. Calif. Vet., 5. pp. 14-17. May-June, 1952.

———————— and J. W. Hibbs. Raising Calves on Ohio High Roughage System. Hoard's Dairyman, 97. p. 118. February 1952.

———————— and J. W. Hibbs. Better Calves at Lower Cost from Ohio High Roughage System. Ohio Farmer. pp. 20-21. March 1952.

Pratt, A. D. and J. L. Haynes. What About Kentucky 31 Fescue for Dairy Pasture? Ohio Farmer, 207(10). 1951. (Dairy Science)

————————. Big Future in Grassland Farming. Rural New-Yorker. May 3, 1952. (Dairy Science)

Pratt, P. F. Release of Potassium from Nonexchangeable Forms from Size Fractions of Several Iowa Soils. Soil Sci. Soc. Amer. Proc. Vol. 16, No. 1. January 1952. (Agronomy)

————————. Potassium Removal from Iowa Soils by Greenhouse and Laboratory Procedures. Soil Sci. Vol. 72, No. 2. August 1951. (Agronomy)

Rings, Roy W. The Oriental Fruit Moth. The Rural New-Yorker. pp. 82-83. February 2, 1952. (Entomology)

————————. Reducing Costs in the Peach Insect Control Program. Ohio State Hort. Soc. Proc. 105:38-45. 1952. (Entomology)

————————. Experimental Control of Plum Curculio on Peaches. Jour. Econ. Ent. 45(3):436-444. 1952. (Entomology)

————————. Fruit Insect Behavior Studies Aided by Radioisotopes. Farm Science and Practice. O.A.E.S. Bull. 725:59-60. (Entomology)

Robison, W. L. Soybean Oil Meal Plus Vitamin B_{12} Gives Quicker Gains for Hogs. Ohio Farm and Home Research, Vol. 37, No. 277. July-August, 1952. (Animal Science)

————————. Swine Day, September 11, 1951. Ohio Agr. Exp. Sta., Mimeo. Ser., Swine No. 70. (Animal Science)

————————, The Wonder Feeds, B_{12} and the Antibiotics, Make Pigs Grow Faster on Less Feed. The Hog Annual, 1952, published by the Farm Quarterly, Cincinnati, Ohio. (Animal Science)

Rogers, Charles F. Your 1952 Grass Silages. Ohio Guernsey Breeder's Bulletin. March-April, 1952. (Agronomy)

————————. Silo Silage Relationships. Proc. Nat. Assn. Silo Mfgrs. 39:2-17. November 1951. (Agronomy)

————————. Treatments to Get the Best Silage Qualities. Proc. Nat. Assn. Silo Mfgrs. 39:50-59. November 1951. (Agronomy)

Rothe, C. F., N. S. Fechheimer, C. S. Baldwin, and L. O. Gilmore. The Effects of the Male Hormones on the Bovine as Determined by Body Measurements. Jour. Anim. Sci. 11: 800. 1952.

Royal, George. Some Immunochemical Studies of Bovine Cellular Antigens. Rept. of the Second Bood Typing Conference. p. 49-50. November 1952.

Saboe, Lewis C. Speed Soybean Harvest by Airplane Treatment. Ohio Farmer 208:12-13. 1951. (Agronomy)

————————. More Soybeans from Fewer Acres. Ohio Farmer 209:8-9. 1952. (Agronomy)

————————. Preharvest Treatment of Soybeans. O.A.E.S. Agron. Mimeo. No. 121. 1951. (Agronomy)

Sarles, R. L. and J. F. Clovis. Ohio Sawmill Directory. For. Circ. No. 1. February 1952. (Forestry)

Sayre, J. D. Autoradiographs Reveal Course Taken by Added Plant Nutrients. Agr. Chem. 7(3):34-36. March 1952. (Agronomy)

————————. Some Hidden Secrets of Plant Nutrition: Accumulation of Radioisotopes in Corn Leaves. Fert. Rev. 28:8-9. January-March, 1952. (Agronomy)

————————. Caution. Radioactive Materials; Corn Leaf Autographs Show Where Elements Accumulate. Ohio Farm and Home Research (Ohio Station) 37:36, 44. May-June, 1952. (Agronomy)

Schollenberger, C. J. and C. W. Whittaker. Development of a Laboratory Method for Evaluating Liming Materials. Mimeo., Div. Fert. and Agr. Lime, BPIS&AE, U.S.D.A. (For Administrative Use Only). March 25, 1952. Res. Rept. No. 241. (Agronomy)

Sherman, R. W. Prepackaging of Ohio Apples on the Farm and Their Marketing. Mimeo. No. 230. Dept. of Agr. Econ. and Rural Soc. November 1951. (Agricultural Economics and Rural Sociology)

————————. An Appraisal of the Market for Prepackaged Apples. Proc. Ohio State Hort. Soc. February 1952. (Agricultural Economics and Rural Sociology)

————————. Farm Prepackaging of Ohio Apples. Apple Research Digest. July 1952. (Agricultural Economics and Rural Sociology)

Sleesman, J. P. and J. D. Wilson. Spray and Dust Formulas for the Control of Vegetable Insects and Diseases. Ohio Agr. Exp. Sta. Dept. of Ent. Pub. Series, No. 21. 1952. (Entomology)

————————. Up-to-date on Tomato Insect Control. Rept. of the 21st An. Conf. Ohio Canners Assn. pp. 7-9. 1952. (Entomology)

———— and J. D. Wilson. Up-to-date on Potato Insect Control. Ohio Veg. and Potato Growers Assn. Proc. 37:94-98. 1952. (Entomology)
———— and ————. Spray and Dust Formulas for the Control of Vegetable Insects and Diseases. Ohio Veg. and Potato Growers Assn. Proc. 37:129-142. 1952. (Entomology)
———— and ————. The Control of Cucumber and Muskmelon Diseases and Insects. Ohio Veg. and Potato Growers Assn. Proc. 37:142-162. (Entomology)
Starbuck, R. R. Building a High Production Dairy Herd. Farm Quarterly (summer):44-47, 133-134. 1952.
Stringfield, G. H. and H. L. Pfaff. A Summary of Corn Performance Experiments in Ohio: 1943 to 1949. Res. Circ. 14. August 1951. (Agronomy)
Thatcher, L. E., C. J. Willard, and R. L. Jeffers. Kenland Red Clover New Disease-resistant Variety Adapted to Southern Ohio. Ohio Farm and Home Research, Vol. 36, No. 273. (Agronomy)
———— and G. H. Stringfield. Earlier Planting of Wheat: Legumes Aid by Corn Row Spacing. Ohio Farm and Home Research, Vol. 37, No. 285. (Agronomy)
————. What is a Good Crop Rotation? 1952 Ohio Farm Bureau Fertilizer Flashes. (Agronomy)
Tyrrell, Dorothy Poertner, Mary Holke Jenkins, and Adelia E. Weis. The Nutritive Value of Black Walnuts. Res. Bull. 476, Univ. of Mo. May 1951. (Home Economics)
————, Elizabeth R. Harding, Elizabeth Hamilton Bay, Adelia Weis, and Bertha Bisbey. A Nutritious Bread. Res. Bull. 478, Univ. of Mo. July 1951. (Home Economics)
Volk, G. W. Obtaining Top Crop Yields. 1952 Ohio Farm Bureau Fertilizer Flashes. (Agronomy)
Washburn, R. G. and J. W. Hibbs. Ascorbic Acid and Riboflavin Content of Market Milk. O.A.E.S. Res. Circ. 16. April 1952. (Dairy Science)
Weaver, C. R. Ten Suggestions for Controlling Spittlebug Nymphs Without Harmful Insecticide Residues. 7th An. Meet. North Central States Branch Amer. Assn. Econ. Ento. pp. 32-33. (Entomology)
————. Tests of Insecticidal Control of Meadow Spittlebugs in 1951. Ohio Agr. Exp. Sta. Sept. of Ent. Pub. Series, No. 20. 1951. (Entomology)
————. Fall Applications of Insecticides to Control Spittlebug Nymphs. Jour. Econ. Ent. 45(2):238-241. 1951. (Entomology)
Weaver, Elaine Knowles. A Study of the Use of Three Types of Automatic Washers. Res. Bull. No. 715. October 1951. (Home Economics)
————. Laundering of Blankets in Automatic Washers and Dryers. Ohio Agr. Exp. Sta. Bull. No. 717. March 1951. (Home Economics)
————. Facts to Know About Automatic Washers. Ext. Mimeo. MM 17. July 1952. (Home Economics)
————. Directions for the Laundering of Blankets in Automatic Washers and Dryers. Ext. Mimeo. 551/200. (Home Economics)
————. Laundering's New Status. Forecast. January 1952. (Home Economics)
————. It's Blanket Washing Time. Farm Journal. April 1952. (Home Economics)
————. Hard and Rusty Water Can Be Conquered. Kelvinator Kitchen. April 1952. (Home Economics)
Willard, C. J. and R. R. Davis. Crabgrass in Lawns. Ohio Farm and Home Research. Vol. 37, No. 274. January-February, 1952. (Agronomy)
———— and C. W. Ellenwood. Poison Ivy in Orchards Reduced by Spraying. Ohio Farm and Home Research. Vol. 37, No. 275. March-April, 1952. (Agronomy)
————. Early June Hay Making Calls for Revisions in Methods of Handling. Ohio Farm and Home Research. Vol. 37, No. 276. May-June, 1952. (Agronomy)
———— and R. A. Peters. The Use of Sodium Trichloroacetate on Johnsongrass. Down to Earth. Vol. 7, No. 2. Pages 10, 11. Fall, 1951. (Agronomy)
————. The Management of Alfalfa Meadows After Seeding. Advances in Agronomy 3:94-112. 1951. (Agronomy)
————. Weed Killers. Successful Farming. May 1952. (Agronomy)
————. Where Do We Go From Here? Weeds. Vol. 1, No. 1. pp. 9-12. 1951. (Agronomy)
————. Ohio Experiments on the Chemical Control of Weeds. Soybean Digest. pp. 12-13. April 1952. (Agronomy)
————. The Status of Herbicide Poisoning. Proc. 8th An. Meet. of NCWCC., Oklahoma City, Oklahoma. pp. 86-89. December 11, 12, 13, 1951. (Agronomy)
———— and R. A. Peters. Sodium Trichloroacetate for Johnsongrass Control. Abstracts. 1951 An. Meet. of the Amer. Soc. of Agron. August 27-31, 1951. (Agronomy)
———— and E. K. Alban. Chemicals for Weed Control. Pesticide News, 5:10-18. January-February-March, 1952. (Agronomy)
————. Here's Why Many New Seedings Winterkill. Ohio Farmer. August 1951. (Agronomy)
————. Principles of Making Forage Seedings. Ohio Farmer. January 1952. (Agronomy)
————. Here's the Latest About Soybean Weed Killers. Ohio Farmer. May 1952. (Agronomy)
————. Review of "Principles of Weed Control", by Ahlgren, Klingman and Wolf. Agron. Jour. 44:157. March 1952. (Agronomy)
————. Chemicals and Cultivators Gang Up on Weeds. Ohio Farmer. May 1952. (Agronomy)
————. Meadow and Pasture Mixtures. Fertilizer Flashes, published by O.F.B. Corp. 1952. (Agronomy)
————. Johnsongrass Can Be Controlled—1951. O.S.U. Ext. Serv. 1951. (Mimeographed). (Agronomy)
————. Meadow and Pasture Mixtures. 1952 Ohio Farm Bureau Fertilizer Flashes. (Agronomy)
Winter, A. R., Blanche Burkart and Howard Wildey. Further Studies on the Whole Blood and Tube Methods of Testing Turkeys for Salmonella Pullorum Infection. Poul. Sci. 31:399-403. May 1952.
Yacowitz, H., C. H. Hill, L. C. Norris and G. F. Heuser. Distribution of Vitamin B_{12} in the Organs and Tissues of Chicks. Proc. of Soc. for Exp. Biol. and Med. 279-280. 1952.
————, R. F. Miller, L. C. Norris and G. F. Heuser. Vitamin B_{12} Studies With the Hen. Poul. Sci. 31, No. 1. January 1952.

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R. B. Neiswander, Ph. D. . . . Asso. Professor
J. B. Polivka, Ph. D. . . . . Assistant Professor
R. W. Rings, Ph. D.[1] . . . . Assistant Professor
J. P. Sleesman, Ph. D. . . Associate Professor
C. R. Weaver, Ph. D. . . . . Assistant Professor

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L. L. Knudsen, Ph. D. . . . . Assistant Professor
J. W. Meteer, M. F. . . . . Assistant Professor
R. L. Sarles, M. F. . . . . Instructor
I. W. Wade, B. S. . . . . Instructor
J. A. Gibbs, M. S. . . . . Assistant Professor

HOME ECONOMICS

Columbus

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Mrs. Mary B. Patton, Ph. D. . Asso. Prof. Asso. Chm.
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Helene Heye, Ph. D. . . . . Professor
Christine Newark, Ph. D. . . . Asso. Professor
Mrs. Inez Prudent, Ph. D. . . . Asso. Professor
Mrs. Dorothy P. Tyrrell, M. A. . . . Instructor
Mrs. Elaine K. Weaver, Ph. D. . Asso. Prof.
Marion A. Wharton, Ph. D. . . Asst. Professor

HORTICULTURE

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R. R. Barton, M. S. . . . . Instructor
J. M. Beattie, Ph. D. . . . . Assistant Professor
H. D. Brown, Ph. D.[2] . . . . . Professor
W. N. Brown, Ph. D.[2] . . . . . Professor
John Bushnell, Ph. D. . Associate Professor
L. C. Chadwick, Ph. D.[2] . . . . . Professor
Donald Comin, M. S. . . . Assistant Professor
C. W. Ellenwood, ... Assistant Professor
W. A. Gould, Ph. D.[2] . . . Assistant Professor
F. O. Hartman, Ph. D.[2] . . . . . Asst. Professor
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F. R. Koutz, D. V. M., M. S.[2] . . . Asso. Prof.
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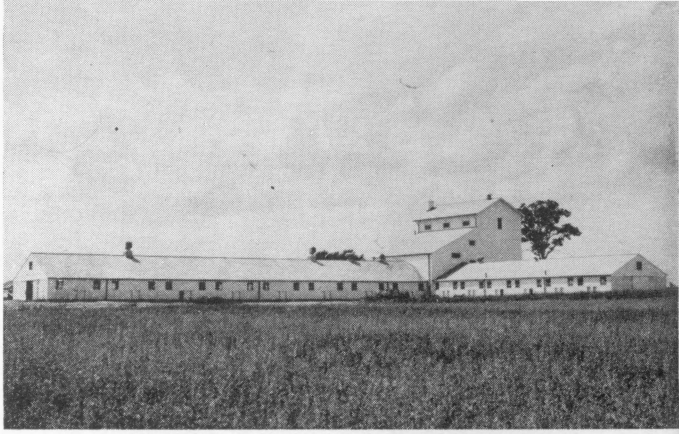
G. S. Mechling, D. V. M.[2] . . . . . Assistant
E. N. Moore, Ph. D. . . . . Professor
R. E. Rebrassier, D. V. M., M. S.[2] . Professor
W. G. Venzke, D. V. M., Ph. D.[2] . . Professor

PERSONNEL IN CHARGE OF OUTLYING EXPERIMENT FARMS

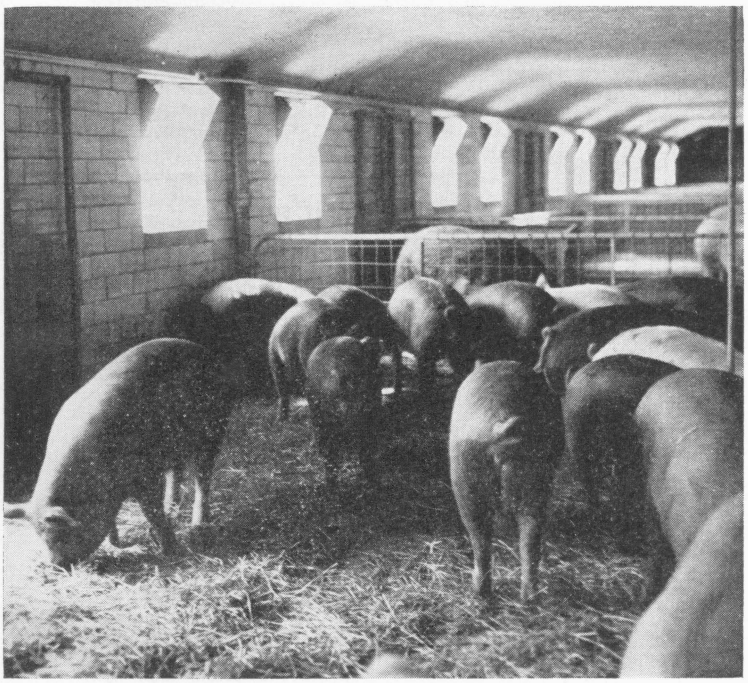
T. F. Wonderling, B. S., Supt. . . . . Outlying Experiment Farms . . . . . Wooster
Cecil Edwards, Manager . . . . . Mahoning County Experiment Farm . . . . . Canfield
J. P. Hamill, B. S., Manager . . . . . Southeastern Substation . . . . . Carpenter
W. L. Jones, B. S., Manager . . . . . Hamilton County Experiment Farm . . . . . Mt. Healthy
C. F. Kreitler, Manager . . . . . Trumbull County Experiment Farm . . . . . Cortland
H. R. McMahon, Manager . . . . . Belmont County Experiment Farm . . . . . St. Clairsville
E. H. Postema, Manager . . . . . Muck Crops Substation . . . . . Willard
H. M. Racer, Manager . . . . . Washington County Truck Substation . . . . . Marietta
H. W. Rogers, B. S., Manager . . . . . Madison County Experiment Farm . . . . . London
H. B. Haskins, B. S., Instructor . . . . Northwestern Substation . . . . . Hoytville

[1]U.S.D.A. Coop. [2]Columbus. [3]Reynoldsburg. [4]On leave.

An aerial view of the new dairy center with experimental agronomy plots in the background.

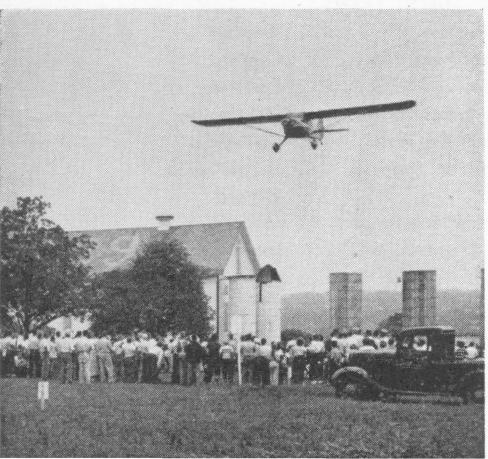


The new swine building is situated on a 160 acre farm devoted to swine and soil conservation research.



These hogs comprise one of the groups in the new swine center where various rations are tested.

Research on disease control and nutrition among turkeys is now part of the Station's poultry program.



Flying Farmers take advantage of the Station's landing strip when attending field day events here.

←

Three new apples, Melrose, Ruby and Franklin have been developed as a result of patient research by Station horticulturists.

→

Columbus Dispatch Photo